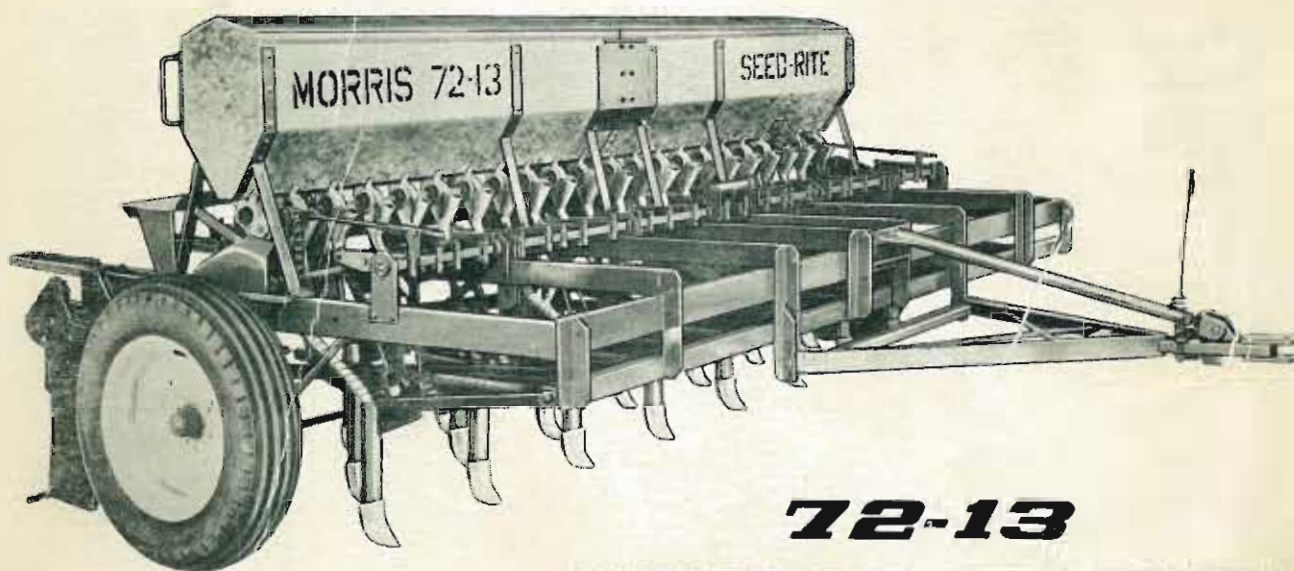


MORRIS

Owner's Manual



72-13
SEED-RITE
(HOE DRILL)

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To The Owner

This Operator's Manual has been carefully prepared to provide the necessary information regarding the operation and the adjustments so that you may obtain maximum service and satisfaction from your new Morris Seed-Rite .

The purpose of this Operator's Manual is to explain maintenance and these routine adjustments which are necessary for the most efficient operation of your machine. To protect your investment, study your Manual before starting or operating in the field.

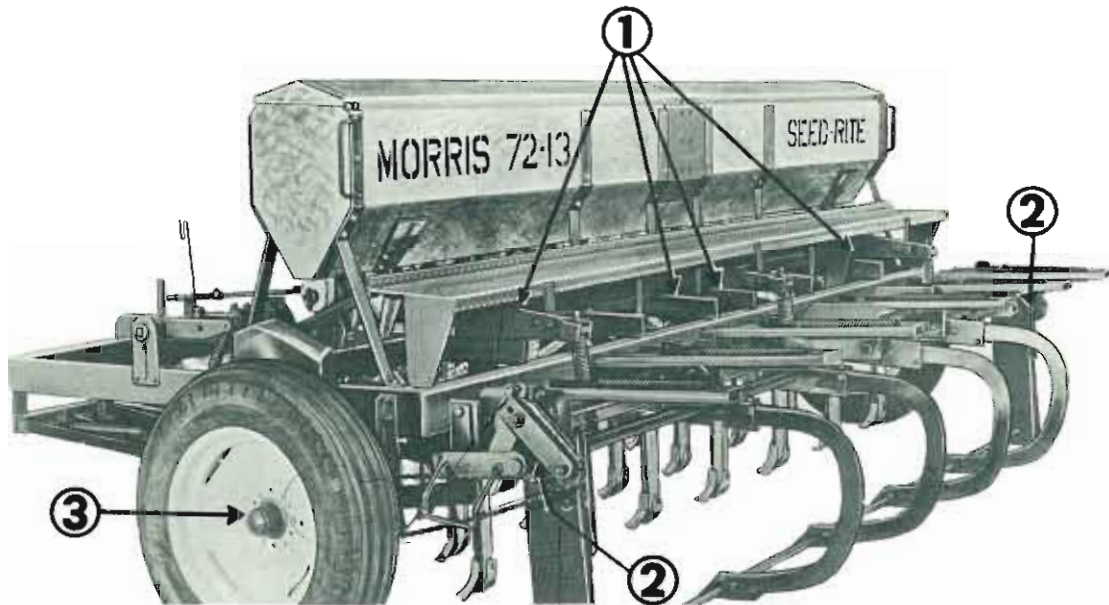
If you should find that you require information not covered in this Manual, consult your local Morris Rod-Weeder dealer or the service department of the Morris Rod-Weeder Company, they will do their best to answer any questions regarding operation and maintenance of your machine. Our dealers are kept informed on the best methods of servicing our machines.

Occasionally, your Seed-Rite may require replacement parts. If you will furnish your Dealer with the part number, description and full information of the part he will be able to supply you with the necessary replacement required. Our Dealers carry a stock of fast moving Morris parts. If the Dealer does not have the necessary part, our Factory will supply you with it promptly.

KEEP THIS BOOK HANDY AND A READY REFERENCE AT ALL TIMES

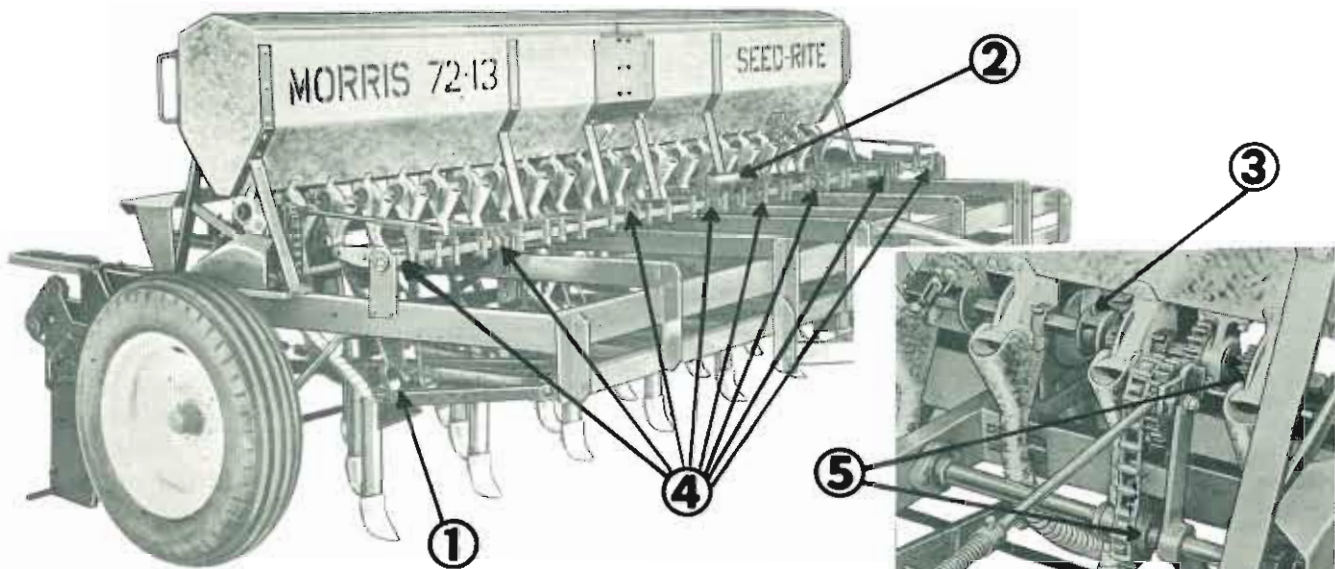
It is the policy of the Morris Rod-Weeder Co. Ltd., to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to make such changes on machines sold previously.

Lubrication



1. ROCKER TUBE- 8 fittings -grease daily.
2. DRIVE SLEEVE- 2 fittings, fill with grease, refill daily.
3. HUBS- Wheel bearings should be removed, washed clean, and repacked with a good wheel bearing grease. Grease at least once a year.

REMOVE CHAINS & STORE IN A LIGHT MIXTURE OF MINERAL OIL & DIESEL FUEL OVER WINTER



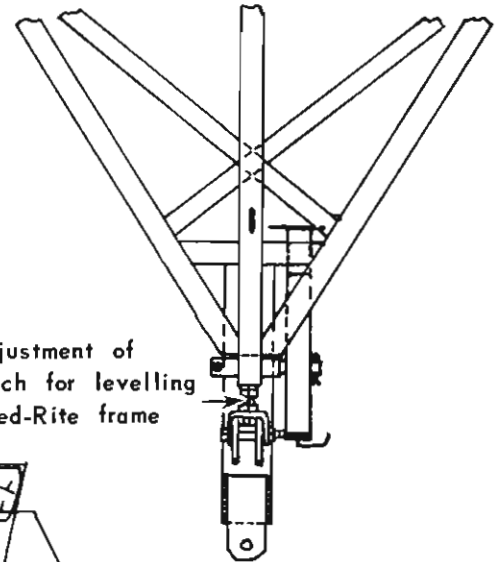
1. SHANK TRIPS- 22 fittings- grease every 300 acres.
2. HYDRAULIC PIVOT- 2 fittings- grease twice daily.
3. SHIFT BLOCK- 2 fittings- grease daily.
4. PRESSURE SHAFT BEARINGS- oil daily.
5. FEED DRIVE BUSHINGS- Oil daily.
6. GEARS- Oil daily.

Adjustment

FRAME LEVELLING

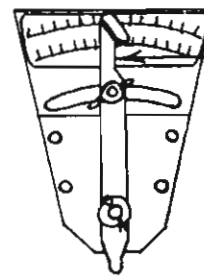
Hitch jack should be swung up and locked in horizontal position when connected to the tractor drawbar. With the machine on level ground adjust the nut on the front of the hitch to level the frame (check with level) and compare that the silver pointer (located on pressure arm plate) aligns properly with punch mark. See that pointer swings freely.

Adjustment of Hitch for levelling Seed-Rite frame



SEED RATE INDICATOR

Both seed boxes are independently adjusted and must be set the same. The bushels per acre setting is read from the right hand (notched) side of the indicator arm. (See page 7 for accurate setting).

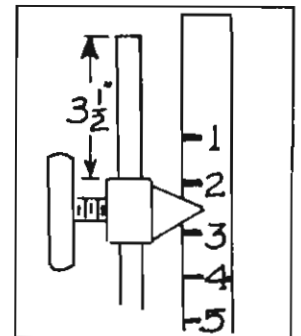


Read from Right Hand (Notched) Side of Arm

SEED RATE INDICATOR

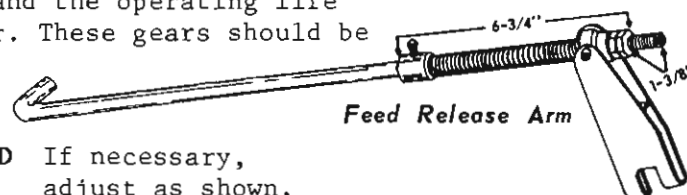
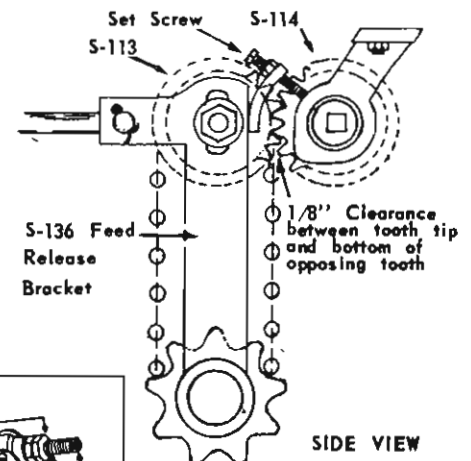
DEPTH GAUGE

The depth gauge indicates the approximate depth of seeding. The amount the wheels sink into the ground and the amount the points (S-74) are worn must be taken into consideration. On initial setting place the top of the indicator point $3\frac{1}{2}$ " below the top of the rod as shown. On firm ground with new points and your gauge reading $2\frac{1}{2}$, the points should operate at a depth of approximately $2\frac{1}{2}$ ". Check your actual operating depth behind the points in the loose soil occasionally as the points will wear and allowances must be made for the amount the wheels sink in when working in loose ground.



FEED DRIVE ADJUSTING SCREW

The S-113 and S-114 or the S-116 and S-114 drive gear combinations must be adjusted so that the gears mesh properly. The points of the teeth should not strike the bottom of the other gear. The set screw should be adjusted to allow a minimum of $\frac{1}{8}$ " clearance between the tip of the tooth and the bottom of the opposing gear. Failure to adjust this set screw to allow this minimum clearance will result in excessive friction and wear which in turn will reduce the performance and the operating life of the drive gear. These gears should be oiled daily.



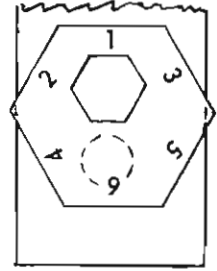
Feed Release Arm

FEED RELEASE ROD If necessary, adjust as shown.

Adjustment

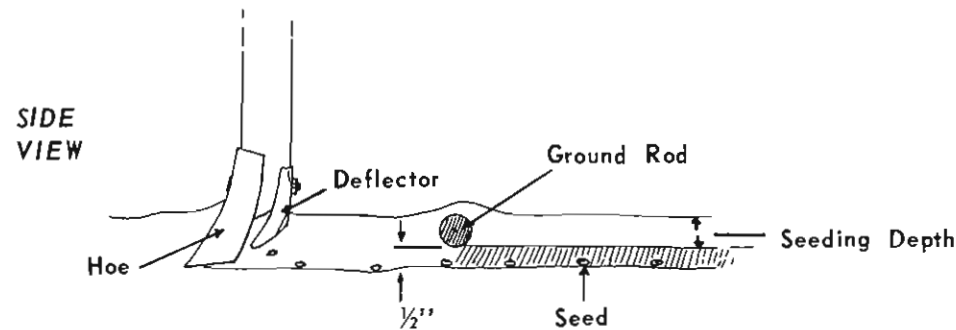
HEXAGON BLOCKS

On initial setting of the hexagon blocks located on either side of the weeder frame, place the hexagon block in the upper hole of the vertical control angles with the #1 setting on the hexagon block to the top. With the points in new condition and in firm soil the rod will normally operate at a depth of 2" or 1/2" above the seed. Adjust further if necessary.



NOTE: Changing from #1 to #2 will raise the rod 5/16".

DEPTH OF SEEDED GRAIN BELOW THE GROUND ROD

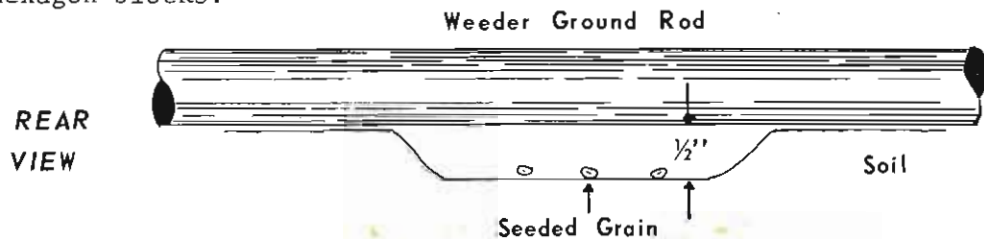


Due to the excellent penetration of the Seed-Rite care must be taken that the grain is not seeded too deep. For instance, the Agricultural Machinery Administration recommends that wheat or oats would normally be sown between 2 and 3 1/2" deep (loose soil) for best results on a long term average. The two illustrations above and below indicate the depth of the seed along with the distance the rod operates above the seeded grain.

Example 1: When seeding at a depth of 2" with the hexagon block in the top hole and set on #1 at the top, this will allow the ground rod to operate approximately 1/2" above the seed.

Example 2: When seeding at a depth of 2 1/2" and the hexagon block in the bottom hole with number 6 at the top, this will also allow the ground rod to operate approximately 1/2" above the seed.

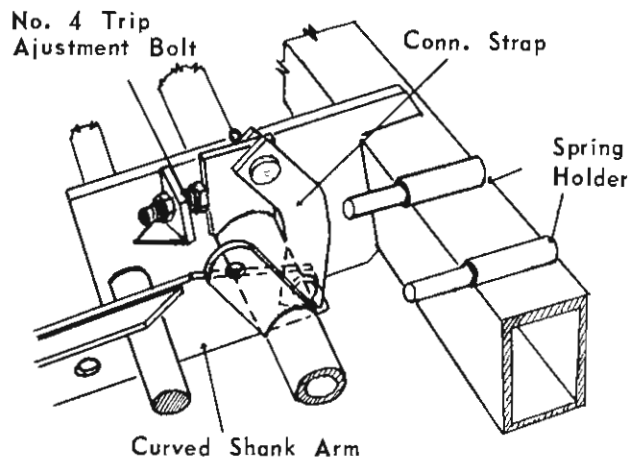
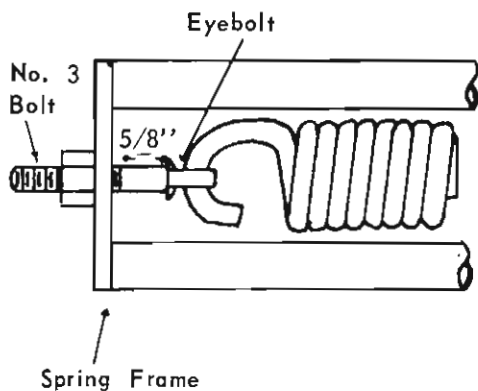
To check the height or distance of the rod above the seed, carefully remove the loose soil away from the rod directly behind one of the hoes. Measure from the bottom of the rod to the firm soil below. See illustration below. Normally the rod should be 1/2" to 3/4" above the seed or you should be able to slide your fingers under the rod. This adjustment can only be checked when the weeder frame is resting on the hexagon blocks.



Adjustment

Loose Soil - Loosen off the #3 adjustment bolt on spring frame, leaving enough tension to return the rod to its working position after it has tripped.

Heavy Soil - Tighten #3 adjustment bolt on spring to apply more pressure to the gangs.



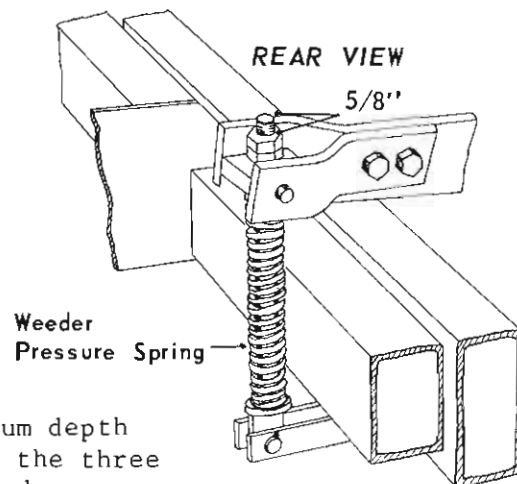
TRIP ADJUSTMENT

The #4 trip adjustment bolt is adjusted at the factory with 3/8" between the head and the bracket, and should be correct for average soil conditions.

WEEDER PRESSURE SPRINGS

These pressure springs are located on the rear. When set for normal conditions will have 5/8" of thread above the nuts..

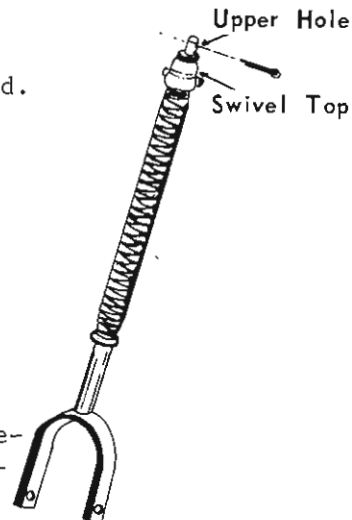
To increase the pressure on the rod weeder an additional 3/8" washer (S-257) can be supplied to be used between the top of the spring and the swivel block.



Note: The hexagon block, page 4, controls the maximum depth of the weeder. However, the position of the nuts on the three weeder pressure rods at rear synchronize the up and down movement of the rod and the points. Therefore, it is IMPORTANT to turn the nuts down on the pressure rods to compensate for wear of the points and the amount the wheels sink in the ground.

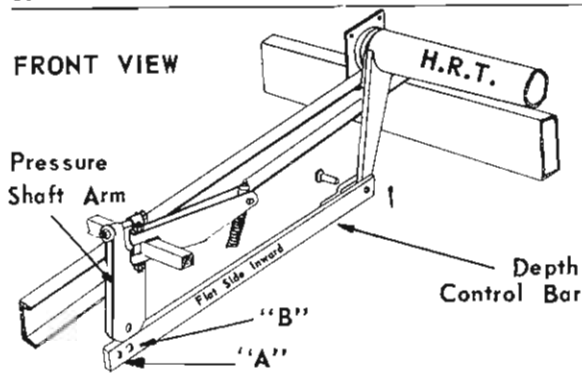
PRESSURE ROD SPRINGS

For normal setting of the pressure rod springs, place the cotter pin in the upper hole above the thick blue 3/16" washer.



TIRE PRESSURE

Maintain the 750 x 20 tires at 32 lbs. pressure. This is the required pressure for correct acreage reading as well as the necessary capacity.

**DEPTH CONTROL BAR-**

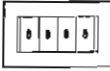
The normal setting of the Depth Control Bar is in the rear hole (as shown "B"). The front hole marked "A" on the control bar will normally not be used. This would be required only in extremely hard soil conditions or when the points are badly worn.

Note: Be sure both sides of the machine are set in hole "B".

Problems and Correction Reference

PROBLEM	CORRECTION
Breaking or Bending Rods	Screw trip adjustment bolt #4 further out. See Page 5.
Connecting strap pins catching on blue plate bolts.	Check that gangs trip up and down freely and that the button head pins are installed correctly. See Page 6.
Uneven Penetration	Check that frame is level. See page 3. Check that hex. blocks are set at the same number. Page 4. Check that each tire has 32 pounds pressure. Check that depth control bars are in same hole. (B). Pg. 6.
Unequal Seeding	Use shims (S-241 and S-242) supplied, if necessary to correctly space feed cups. Loosen feed cups and re-align if necessary.
Feed Drive Gear Slipping	Adjust collar on feed release rod to give spring more pressure. Check gear and adjustment. Page 3.
Ground Rod Clearance	Check weeder pressure spring adjust. at rear and hex. block adjustment. Page 4 and 5.
Acreage Tally Incorrect	Check that tally arm is set correctly to register next number. Check that spring loaded arm returns fully to starting position. Maintain tires at 32 lbs. pressure, See acreage chart. Page 7.
Rod Disturbing Grain	See Page 4 for adjustment of hex. block. Each number on hex. block raises or lowers rod 5/16". Set block so rod works 1/2" to 3/4" above seeded grain.
Chains Breaking	Important- Check and align all chains and sprockets properly before putting the machine in operation. Keep chains lubricated. Insure that the open end of the connecting link spring clips are facing opposite the direction rotation as the chain travels around the sprocket.
Noisy Feed Cups	Loosen the bolts in the feed cup and align cups. Tighten bolts.
Grain Spouts coming out of Tubular Shanks	Stretch out spouts slightly to lengthen.

ACRE TALLY CALCULATION CHART

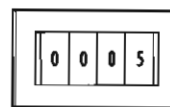
TALLY READING 	REGULAR SEED SETTING S-113 - 9 Tooth Sprocket WITH 21 TOOTH GEAR		FINE SEED SETTING S-116 - 11 Tooth Sprocket WITH 14 TOOTH GEAR	
	C S-112 9 Tooth	S-317 6 Tooth	S-112 9 Tooth	S-317 6 Tooth
0001	.1	.15	.18	.27
0005	.5	.75	.92	1.3
0010	1.0	1.50	1.84	2.8
0020	2.0	3.00	3.68	5.5
0030	3.0	4.50	5.53	8.3
0040	4.0	6.00	7.37	11.1
0050	5.0	7.50	9.20	13.8
0060	6.0	9.00	11.00	16.5
0070	7.0	10.50	12.90	19.4
0080	8.0	12.00	14.70	22.0
0090	9.0	13.50	16.50	24.7
0100	10.0	15.00	18.40	27.6
0200	20.0	30.00	36.80	55.4
0300	30.0	45.00	55.30	83.0
0400	40.0	60.00	73.70	110.0
0500	50.0	75.00	92.10	138.0
0600	60.0	90.00	110.0	165.0
0700	70.0	105.0	129.0	194.0
0800	80.0	120.0	147.0	220.0
0900	90.0	135.0	165.0	247.0
1000	100.0	150.0	184.0	276.0
2000	200.0	300.0	368.0	554.0
3000	300.0	450.0	553.0	830.0
4000	400.0	600.0	737.0	1100
5000	500.0	750.0	921.0	1380
72-13 TURNS PER ACRE OF SQUARE FEED SHAFT	242	132	162	107
80-18 TURNS PER ACRE OF SQUARE FEED SHAFT	183	100	122	81

S113 - 9 Tooth Sprocket and
21 Tooth GearS116 - 11 Tooth Sprocket and
14 Tooth Gear

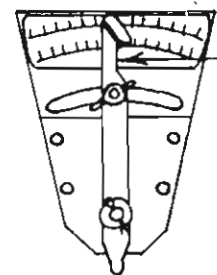
S-93 - 40 Tooth Sprocket

S-112 - 9 Tooth Sprocket

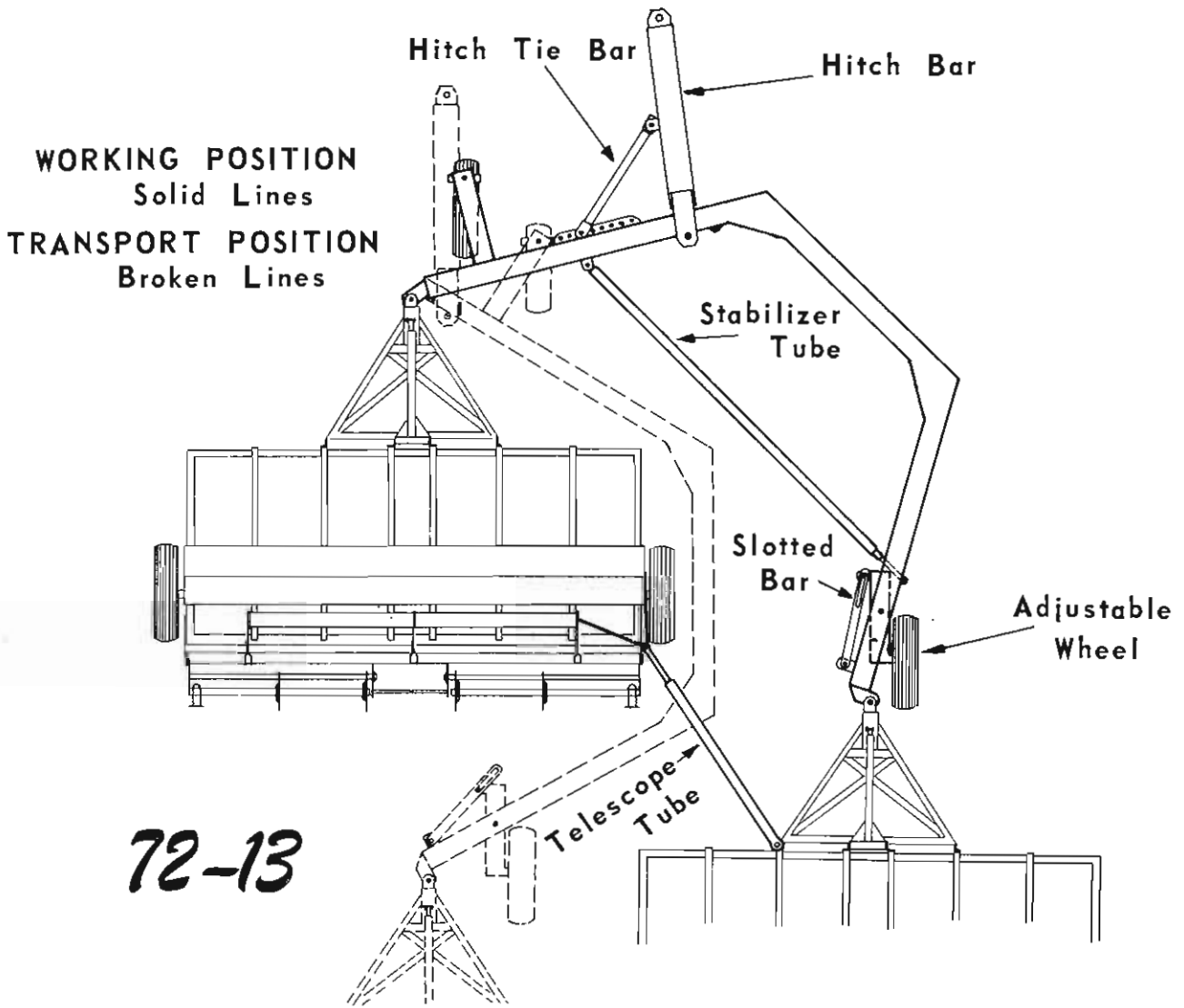
S-317 - 6 Tooth Sprocket

 $\frac{1}{2}$ Acre

Sample Reading

Read from
Right Hand
Side of
Arm

Dual Hitch



72-13 Dual Hitch Assembly

TO SWING 72-13 INTO TRANSPORT (Broken Lines)

1. Fully raise both units.
2. Change hitch bar and hitch tie bar to position shown in broken lines.
3. Swing adjustable wheel so that the bolt is at the inner end of the slot in the slotted bar, and tighten in this position. Unless hydraulic wheel control is used, it might be easier if the rear unit hitch was jacked up.
4. Remove the stabilizer tube and telescope tube and place on the Seed-Rite frame.
5. Drive forward, turning slightly left till the dual hitch comes into place in the carrier on the right front corner of the front unit and lock in this position.

TO SWING 72-13 INTO WORKING POSITION (Solid Lines)

1. Place hitch tie bar and adjustable wheel in working position.
2. Unlock dual hitch from its carrier.
3. Drive ahead and slightly to the right till the units come into working position.
4. Replace the stabilizer tube and telescope tube.
5. Check for correct tracking.

ADJUSTMENT

1. Set up the units as shown in the drawing.
2. Loosen slotted bar so adjustable axle can pivot freely. If hydraulic steering is used on the adjustable wheel, the ram should be removed till Step 3 is completed.
3. Set both Seed-Rites to the same working depth. Adjust hitch tie bar until units track correctly.
4. Tighten slotted bar on adjustable axle. It is advisable to mark the position of the slotted bar for future reference, once the correct settings are found.

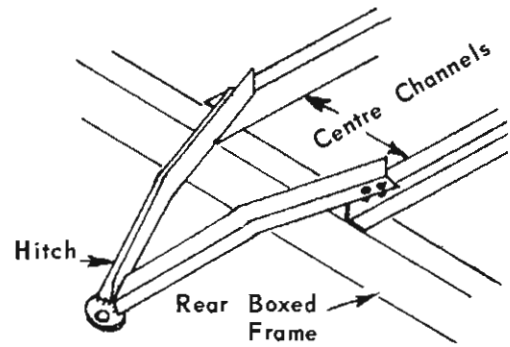
OPERATION

1. A limited amount of weight may be added to the adjustable wheel to improve tracking. This should preferably be in the form of wheel weights, or fluid in the tire.
2. The adjustable wheel should run parallel to the Seed-Rite wheels, though small adjustments can be made to correct tracking errors.
3. A standard 8" stroke hydraulic cylinder may be used in place of the slotted bar on the dual hitch wheel. This is then adjusted to improve tracking on side hills, around curves, or in uneven soil conditions.

Accessories - (Optional Equipment)

TRAILING HITCH

A trailing hitch is available for pulling or towing other implements such as harrows, packers or trailers. This hitch attaches to the centre channels' of the main frame at rear, with 4 bolts as shown.

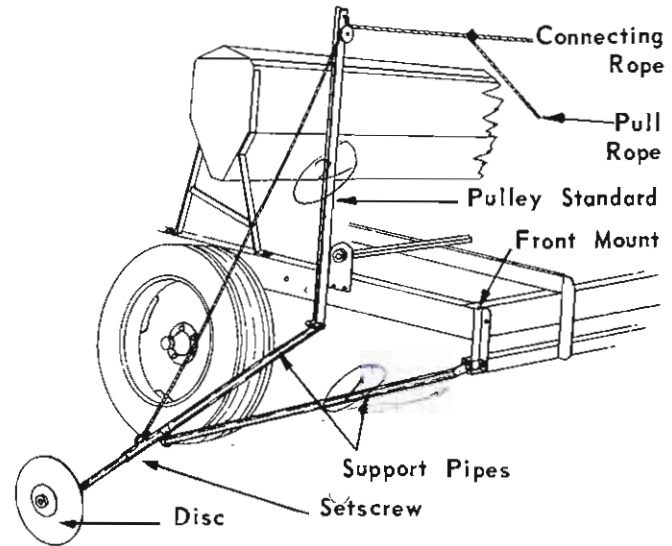


FERTILIZER ATTACHMENT

The fertilizer attachment can easily be mounted on the front of the Seed-Rite. Kirshman have a custom made attachment for our Seed-Rite, however, other popular makes can also be used.

WHEEL MARKERS

Right and left hand markers are available and are easily installed on either side of the Seed-Rite. These markers can be adjusted for correct length and disc angle. See page 19 for installation and adjustment.



Specifications

- 22 Run 7" spacing with 2 1/2" broadcast using 3 1/2" points. Overall coverage 13 feet. Water tight grain box. Holds 16 bushels of wheat. Standard Fertilizer attachments available for front mounting.
- Hydraulic control with one standard 8" cylinder.
- Minimum amount of lubrication required.
- Acreage counter conveniently located at the front with bushels per acre setting at the rear.
- Convenient full length rear foot boards to fill both grain and fertilizer boxes.
- Equipped with 750 X 20 tires.
- Complete weight with standard shovels with tires and tubes including Rod Weeder is 3295 lbs.
- Rod Weeder depth is controlled with the same cylinder with adjustment of the maximum depth to retain the required space above seeded grain.

AVAILABLE AS EXTRA

- Fertilizer attachment.
- Wheel markers.
- Castor wheel to replace regular hitch or to use two units with duplex hitch for wider coverage.

Setting Up Instructions

- Remove wires from bundles and arrange parts conveniently.
- Lubricate all bearings and moving parts as you proceed. See that they work freely.
- Bolts must be used in holes in which they are found, or in parts to which they are attached, unless otherwise shown. Bolts marked with three lines on the head are heat treated (H.T.) and are to be used where specified. They are 75% stronger than regular bolts. Generally, bolts fit into parts of the same color. Wherever the terms "Left" or "Right" are used, it means from a position behind and facing the machine.

Setting Up Hints

1. First, study the Instruction or Setting-up Manual to be assured that you are familiar with the correct procedure and that the machine will be set up properly.
2. Have a level surface or concrete floor on which to set up the machine.
3. Preferably, have a tractor with a front end loader or hoist, or 4 tressels, approximately 30" high X 36" long to lay the frame on, which would be ideal to set up any equipment.
4. A tray with 6 or 8 compartments for bolts, nuts, sockets, etc., which can be easily carried from place to place and a good impact wrench will greatly assist and reduce setting-up time by 15% to 25%.
5. Put the bolts in place with the nut out if possible, both for appearance and efficiency. The nuts should be put on with only a couple of turns until the portion is completely attached. Then tighten with the impact wrench.

BEING PROPERLY ORGANIZED MAKES THE DIFFERENCE

Operating Hints

From surveys and tests conducted it has been found undesirable to cultivate or work the land ahead of the Seed-Rite except possibly a shallow operation of one to two inches one or two weeks prior to seeding. This may be required for an additional weed kill if necessary. Working ahead deeper than two inches will affect the advantages of the Seed-Rite and can cause plugging problems.

The Seed-Rite can be used most effectively in stubble (that has grown a crop the previous year) and will go through a surprising amount of trash in the right conditions.

If there are plugging problems, they can often be overcome by harrowing angleways to that of seeding. Harrowing in this manner with the long spring type harrow helps to spread the lumps and dry out the trash. Two operations may sometimes be necessary in heavy conditions.

MAIN FRAME

If possible use front end loader or ceiling hook and hoist to tip frame on side with front hitch brackets down extending towards tractor. Leave chains attached but slightly slackened. If hydraulic hoist is not available place main frame on tressels or saw horses approximately 30" high with front hitch brackets extending down, boxed frame at rear.

DRAG BAR ASSEMBLY

Install PRESSURE RODS

Note: Three different lengths are used.

(a) The short drag bar requires the "U" end type pressure rods. (20- 1/8" long). Attach with the special shoulder bolts on either side and tighten firmly.

(b) The medium drag bar requires the shorter "U" end pressure rod. (17- 1/2" long) and attaches the same as above.

(c) The long drag bar requires two of the 16 - 1/4" "L" shaped pressure rods attached with cotter pins to outer side.

Points and Deflectors

Install the points and deflectors on the drag bar tubular shank (by placing the deflectors at rear extending forward) using point bolt w/nut and tighten as shown.

Attach the forward end of drag bars to the clevises between the front channel using button head pins as shown.

IMPORTANT- Start from the left side with a short drag bar, then a medium and long as shown on diagram. Follow in this rotation, ending with a short drag bar on the right hand side. There are 8 short and 7 each of medium and long drag bars.

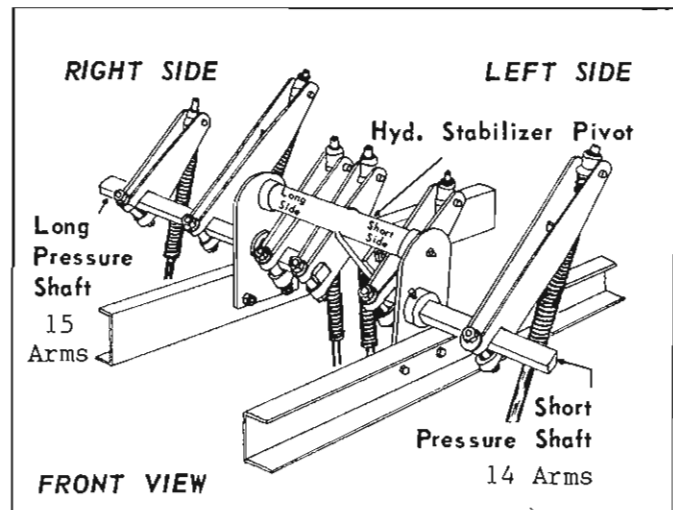
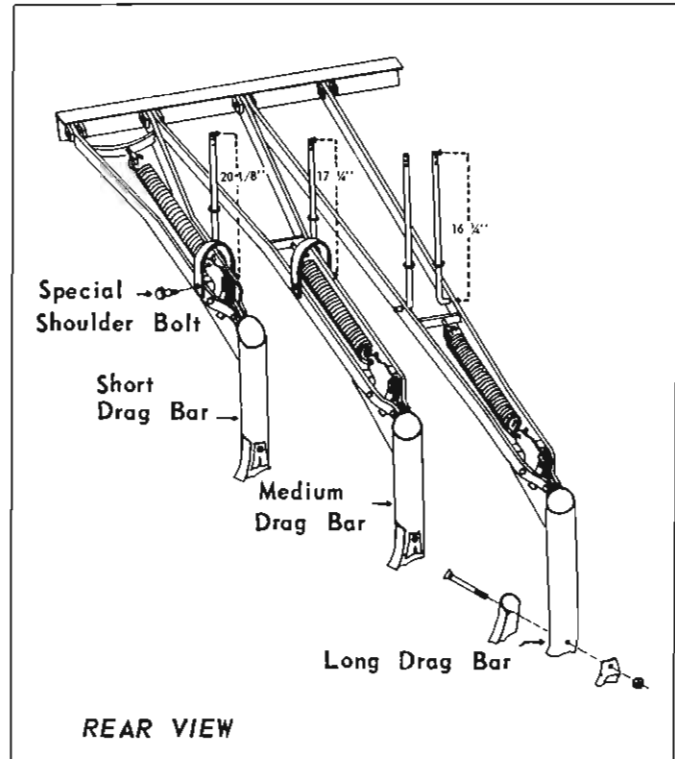
SQUARE PRESSURE SHAFT ASSEMBLY

(a) Install on frame the longer pressure shaft (15 arms) on the right side of frame with the arms extending to the rear.

IMPORTANT- Bolt plates to the frame with the 7/16" X 1" H.T. bolts installed in frame.

(b) Place the longer end of the hydraulic stabilizer pivot shaft into the bearing on top of the inner plate so the lug to attach cylinder extends forward.

(c) Install the short pressure shaft (14 arms) in the same manner as shown, placing the inner bearing plate over the end of pivot shaft. Tighten all bolts securely.



Note: Check and align the square pressure shaft bearings. If necessary to align, loosen the pressure shaft bearing set screws and move the bearings securely up against the bearing plates.

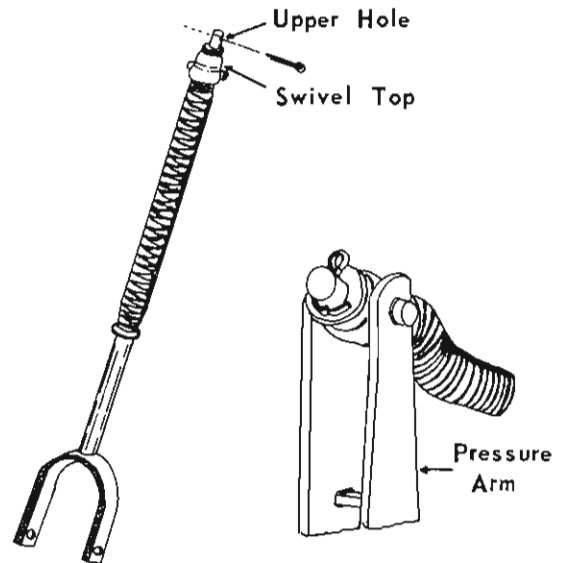
PRESSURE ROD SPRINGS

(a) Place one spring over each pressure rod as shown.

(b) Lift the drag bar and place the top of the pressure rod through the swivel top in pressure arm so that the spring fits into recess at the bottom of swivel.

(c) Place on the thick blue 3/16" washer and insert cotter pin in upper hole on each pressure rod.

Note: The lower hole in the pressure rod is only used when more pressure is desired in extremely hard conditions. See Page 5.



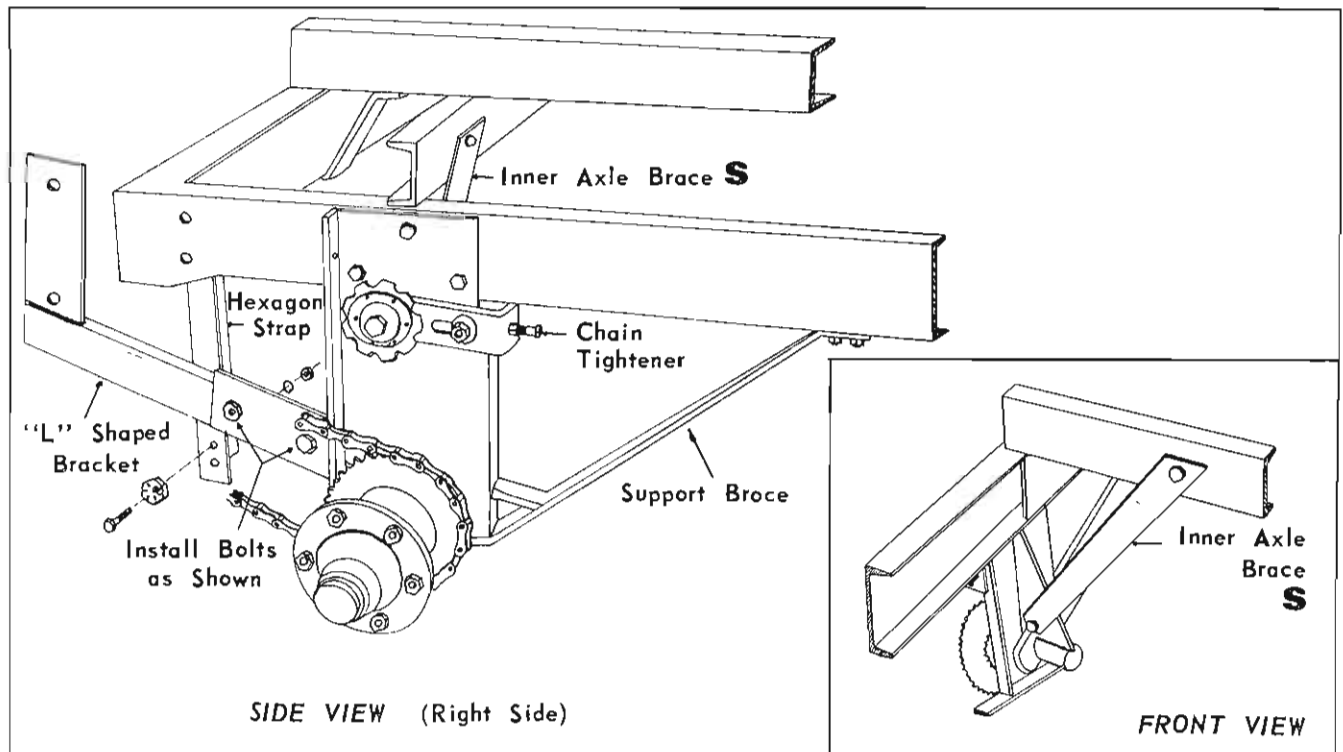
AXLES

(a) Hexagon block angle strap is installed on inner side of frame. Remove lower bolt, loosen top bolt and place in vertical position. Tighten bolts into threaded plate on frame. Install hex. block in upper hole of vertical control angles with no. 1 to the top. See Page 4.

(b) Install axle on either side (marked right or left) of frame with support brace extending forward and up. Attach axle plate loosely until inner axle brace "s" to frame is installed. Tighten all bolts firmly.

(c) The chain tightener attaches to outside of axle plate as shown.

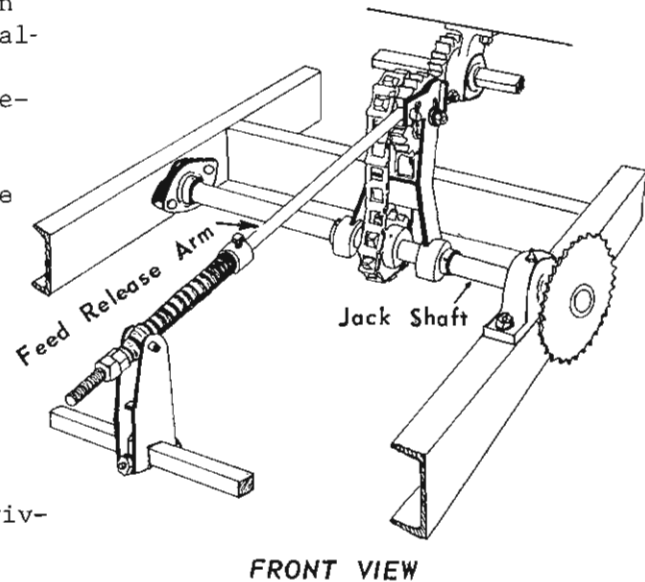
(d) Attach the "L" shaped Weeder support brackets (marked right and left) on the INNER SIDE of axle pivot strap, with front bolt inward (tighten) and back bolt outward (loose).



JACK SHAFT ASSEMBLY

(a) Place Jack Shaft Assembly in position as shown (stenciled left and right) by installing bolts in flange bearings and pillow blocks, align sprockets and tighten bolts securely.

(b) Install chain (42 links) on inner sprocket of hub and jack shaft sprocket. The chain should be reasonably tight.



FEED RELEASE ARM

Attach the feed release arm through the bracket as shown. Adjust only if necessary.

Note: Position of nut and lock nut on swivel bolt. Both nuts are on the same side.

See Page 3 for adjustment.

WHEELS

(a) Mount tire on rim, inflate and maintain at 32 lbs. pressure.

(b) Remove 6 tapered nuts from hub. Place wheel on hub and tighten nuts evenly and extra tight (check occasionally).

If not using tressels

Set frame in a horizontal position:

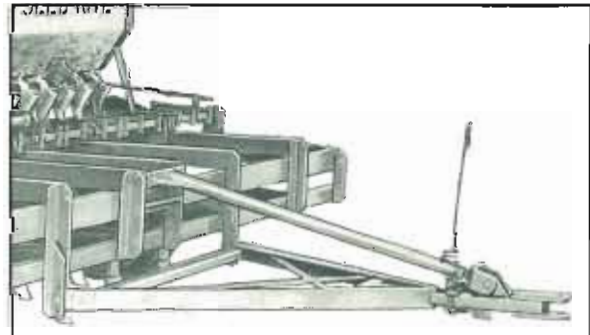
Back tractor up and at the same time lower hydraulic until machine is sitting on ground.

HITCH ASSEMBLY

Use floor jack to raise front of frame.

(a) Install hitch between brackets in centre hole on frame using button head pins.

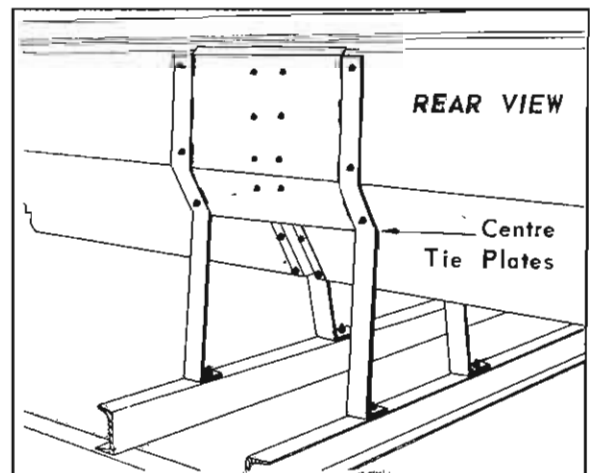
(b) Attach the (tubular) adjustable hitch tie bar to the upper bracket on frame as shown.



SEED BOXES

(a) Remove the shipping crate. Place right and left seed boxes on frame with feed opening to the front and seed control to outer side and at rear. Install bolts through frame and braces from bottom up placing flat washers from crating over the slotted holes with nuts on top. Do not tighten nuts until the two boxes are joined with the centre tie plates, using bolts installed in box, tighten securely.

(b) Align boxes and tighten nuts on braces.



FLEXIBLE GRAIN SPOUTS

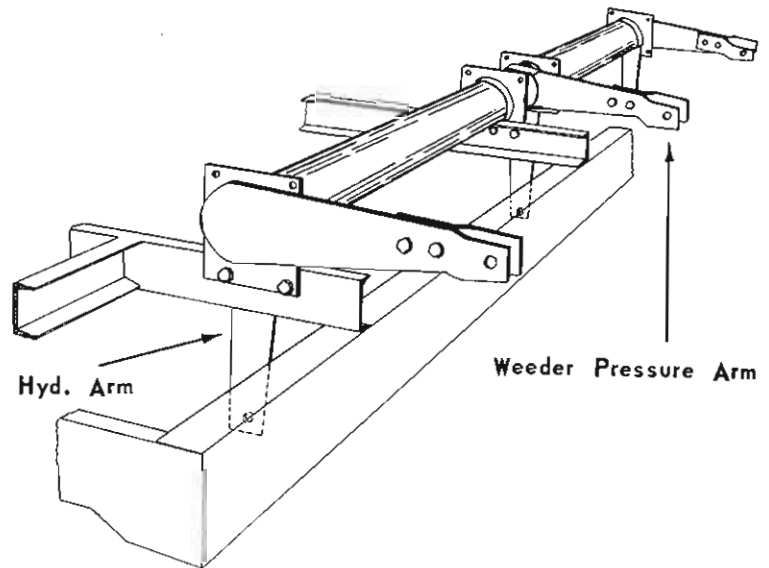
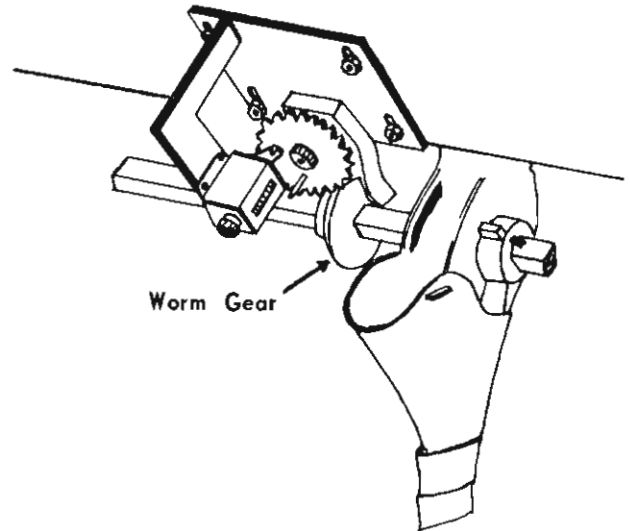
- (a) Place short spouts in tubes on medium drag bars (centre row).
- (b) Place medium spouts in long drag bars (rear row).
- (c) Place long spouts in tubes on short drag bars (front row).

TALLY BRACKET ASSEMBLY

(a) Attach tally bracket on left front of box with nuts to the outside as shown. Place downward extending fork over the worm gear on feed shaft. Adjust the bracket up or down so gear and worm mesh very freely, and lubricate.

(b) The arm on tally (counter) is set so that the pin on the gear rotates over the the outer side of the tally arm which then registers the next number.

Note: The first digit on the tally reads in tenths. For example- 55 equals 5 1/2 acres (when using the S-113 regular gear).



Weeder Assembly

REAR HYDRAULIC ROCKER TUBE

(a) Place rocker tube on rear of frame with centre hydraulic arm extending downward. The three Weeder pressure arms with swivels extend to rear as shown.

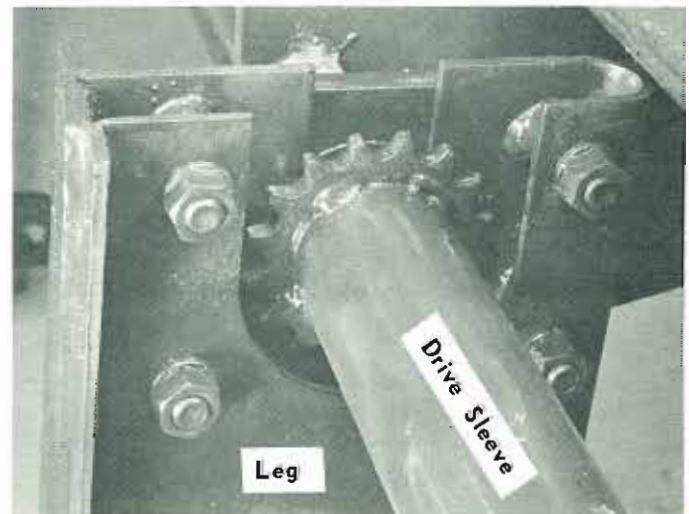
(b) Attach hydraulic rocker plates to frame with 1/2" X 1 1/2" H.T. bolts as shown with nuts to the inside of channels.

(c) Tighten all rocker plate bolts.

(d) Install grease fittings in rocker tube bearings.

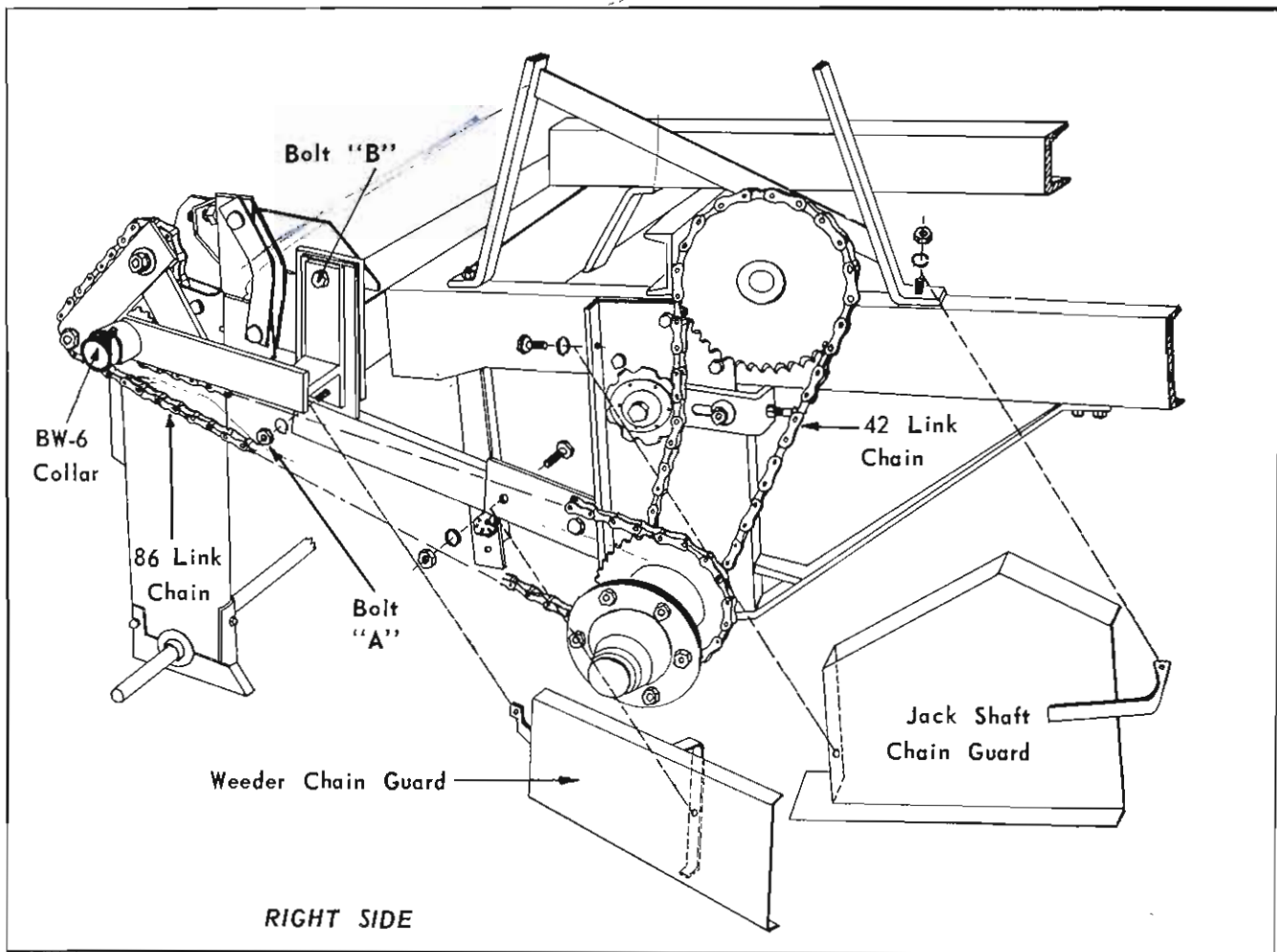
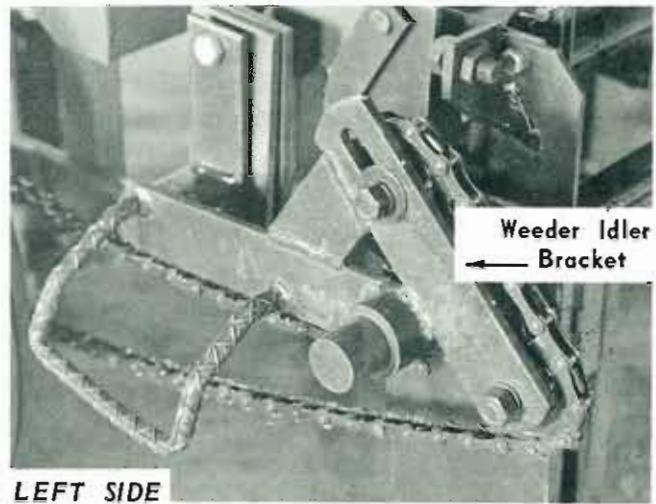
DRIVE LEGS

With weeder frame on tressels (30" high) install both drive legs as shown.



ATTACHING WEEDER

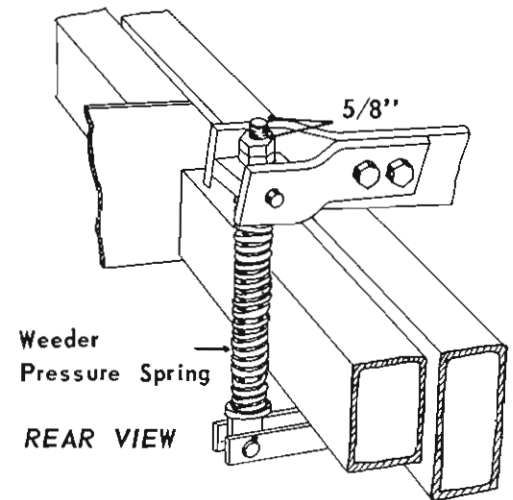
1. Use a hoist or tressels to hold weeder frame level with main frame until attached to the "L" shaped weeder support brackets from axles.
2. Remove BW-6 collars from gangshaft ends and install weeder idler brackets as shown.
3. Place bolt "A" through the three plates on both sides as shown, leaving bolt loose.
4. Place lower bolt "B" through the three plates on both sides as shown (reversed to bolt "A").



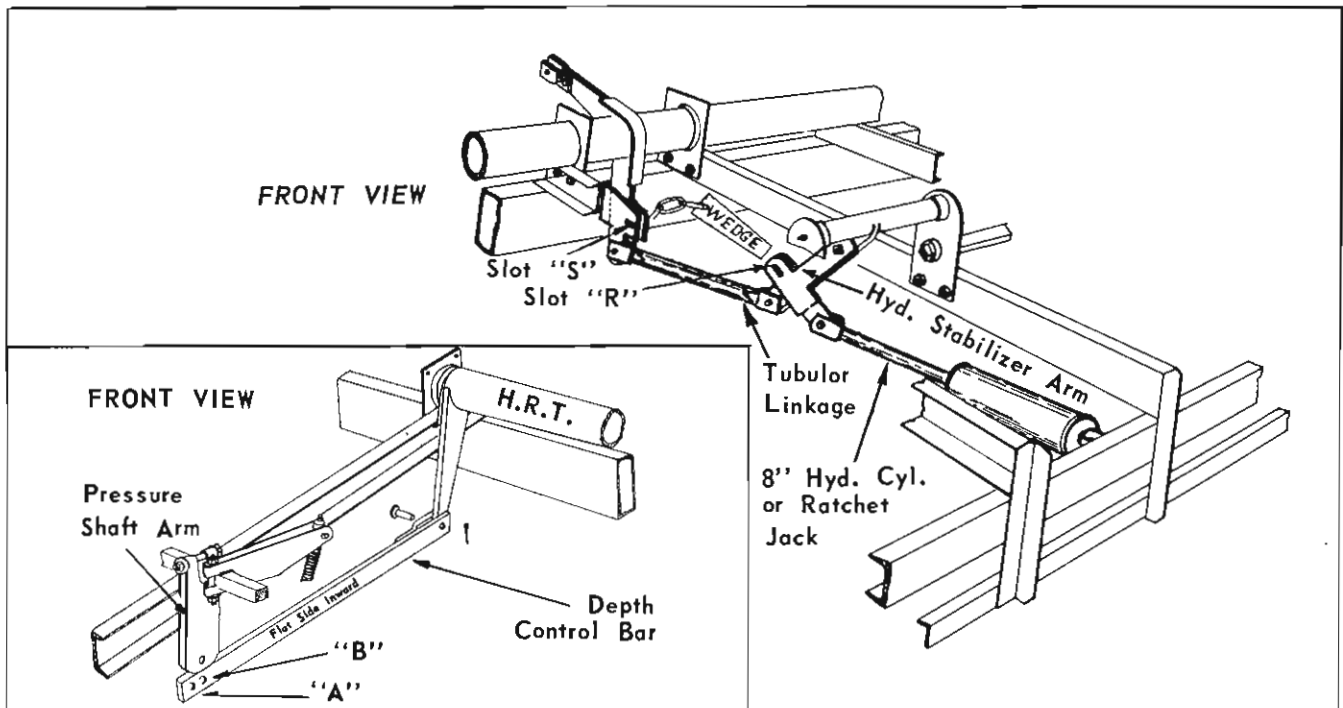
5. Install "weeder chain guard" on the two bolts as shown.
6. Install "jack shaft chain guard" on the two bolts as shown.
7. Tighten all bolts securely.
8. Install BW-6 collars (removed in step 2).
9. Weeder drive chain is installed as shown. *Note:* Remove chain if transporting any great distance.

WEEDER PRESSURE RODS AND SPRINGS

- Loosen bolts on extending arms from hyd. rocker tube. Place swivel block between two lugs on arm and re-tighten as shown. The normal setting has 5/8" of thread above the nuts.
- Place flat end of weeder pressure rod between bracket at rear of 4" X 4" boxed frame. Install pins and cotters.
- To increase the pressure on the Rod Weeder, an additional 3/8" washer can be used between the top of the spring and the swivel block. See Page 5 for adjustment.



TUBULAR LINKAGE AND DEPTH CONTROL BARS



- Install tubular hydraulic linkage (with wedge chain on top) to stabilizer arm and the other end to the centre downward extending arm on 4" rocker tube as shown.
- Install the depth control bar with straight side inward and attach to the downward extending arms on the 4" rocker tube at rear.
- Attach ratchet jack (or 8" hyd. cylinder with piston to the rear pivot) and install wedge in position "R". Raise ratchet (or cylinder) until the rear hole "B" on the depth control bar is lined up with the downward arm on pressure shaft. Secure with a 1 1/2" button head pin. Only use front hole "A" in depth control bar when points are badly worn or extremely hard conditions. See Page 6 for adjustment.

IMPORTANT: For operating install wedge in slot "R" on stabilizer. To remove cylinder extend cylinder fully. Then remove wedge from front slot "R" and install in rear slot "S". Do not use extra wedge or pin (one only) otherwise excessive damage could result.

SHANKS

(a) Install shanks placing bolts as shown. These should be tightened evenly and securely.

RODS

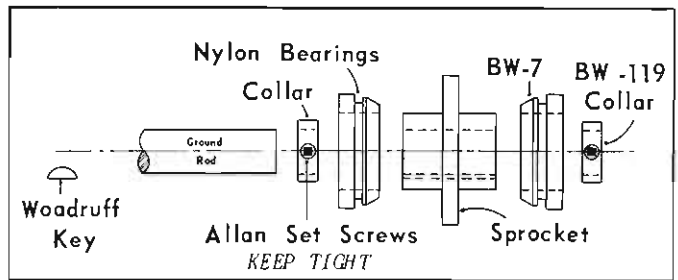
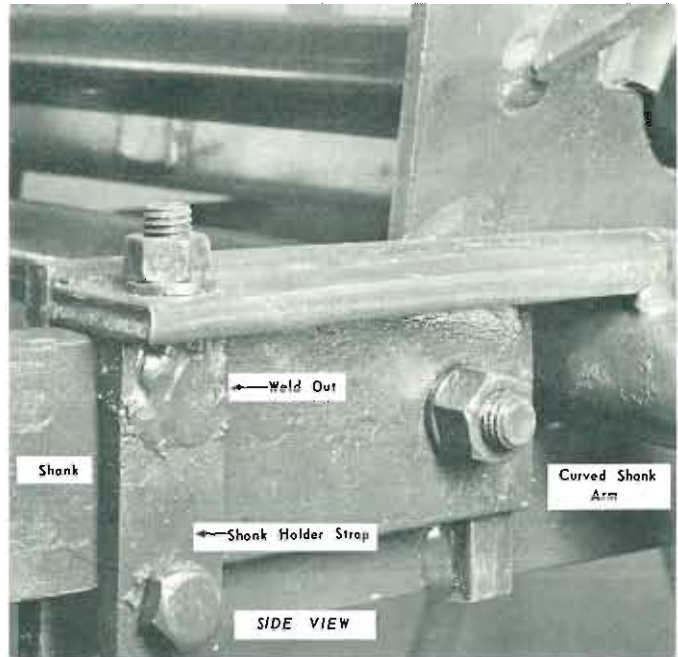
1. Install ground rod sprocket, with woodruff key and collars as shown.
Note: Position collars so that the allen screws fit into the counter sunk holes in the ground rod.

2. Place one nylon bearing on each side of the collar and sprocket assembly and slide rod through the shoes on shanks so the sprocket is directly below the drive leg. Line up the notches in the nylon with the lugs in the leg and block up the rod in position.

3. Install chain (44 links), dropping it down the leg from the top and connecting it around the sprocket at the bottom with a connecting link.

4. Install leg shoe (which holds nylon in position), using a 3/8" H.T. bolt in front and 3/8" bolt with spacer at rear.

5. Both rods are installed in the same manner as shown.



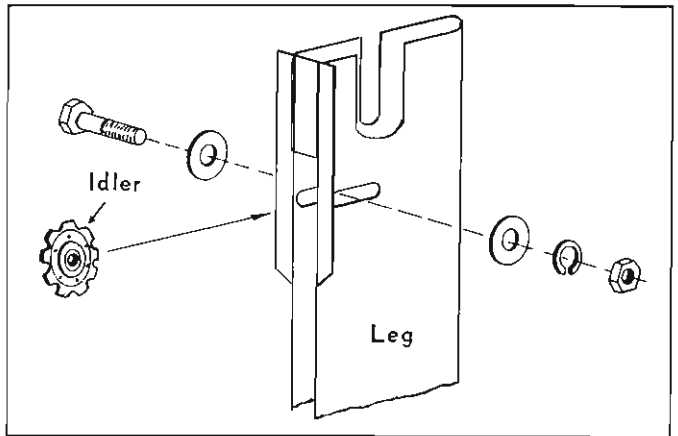
Note: Trip complete gang sections by hand to see that they trip freely.

LEG IDLERS

Install idlers as shown.

1. Leg drive chains are installed with no more than 3/4" back and forth movement 9" above the rod.

Note: -Keep all chains relatively tight.
 -Keep chains in oil when not in use and over winter.
 -Always use new, clean oil. Used oil contains acid and will damage the chain.

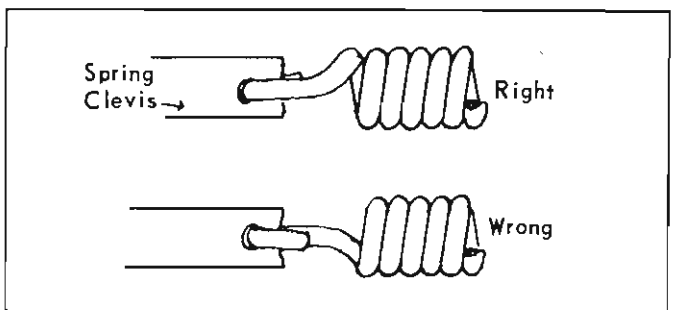


SPRING AND SPRING HOLDERS

Drive the spring frames over the stubs welded on the top of the 4" X 4" boxed frame.

Install springs as shown in drawings.

For further adjustment of trip assembly see Page 5.



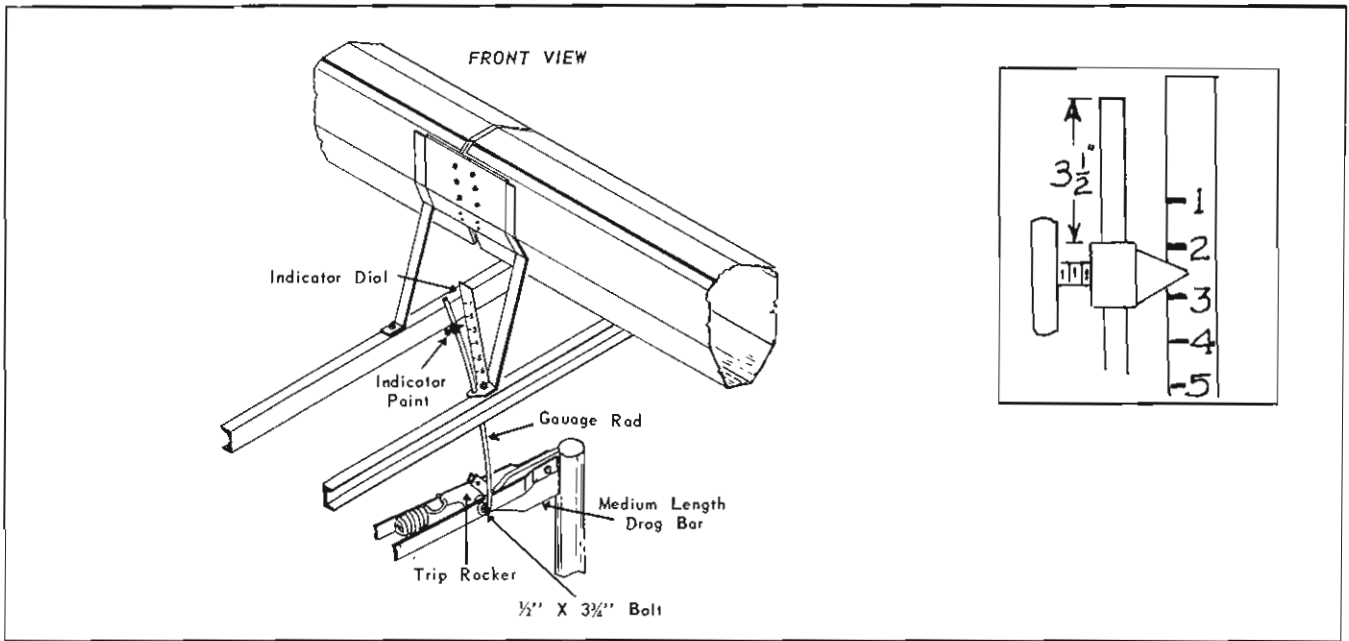
FOOT BOARDS

1. With hydraulic down.

(a.) Attach right board first, with the outer brace on the inner side of the bearing support plate, place bolts so nuts extend inward. (4 bolts) Install left board same as above (4 bolts). Tighten all bolts. The two "L" shaped brackets bolt to the bottom and centre of each footboard with the one end resting on the channel at rear of frame.

DEPTH GAUGE

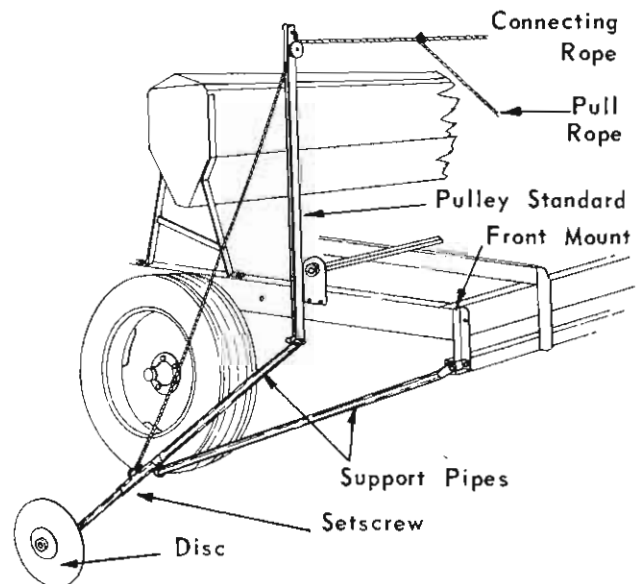
HOW TO INSTALL- Attach to the dial as shown, on the second channel to the left of centre and the gauge rod on the medium length drag bar as shown below, with bolt supplied. See Page 3 for adjustment.



WHEEL MARKERS

Right and left hand markers are available and attach the same as follows:

1. Install pulley standard in a vertical to main frame using bolt installed in standard.
2. Bolt front pipe support to bottom of front frame angle.
3. Adjust the length of the markers by loosening set screws and sliding the extension axle in or out of the support pipe as required. Tighten set screws firmly.
4. To adjust disc angle rotate extension axle back or forward as desired and tighten set screws to hold in position.
5. Pass one end of connecting rope through pulley and tie to eye bolt on support pipe. Pass other end through pulley on other side of frame in same manner, so when marker on one side is raised the other automatically lowers.
6. Attach pull rope as shown. **Note:** Grease disc regularly.



Morris

72-13

SEED-RITE

(HOE DRILL)

PARTS SECTION

I N D E X

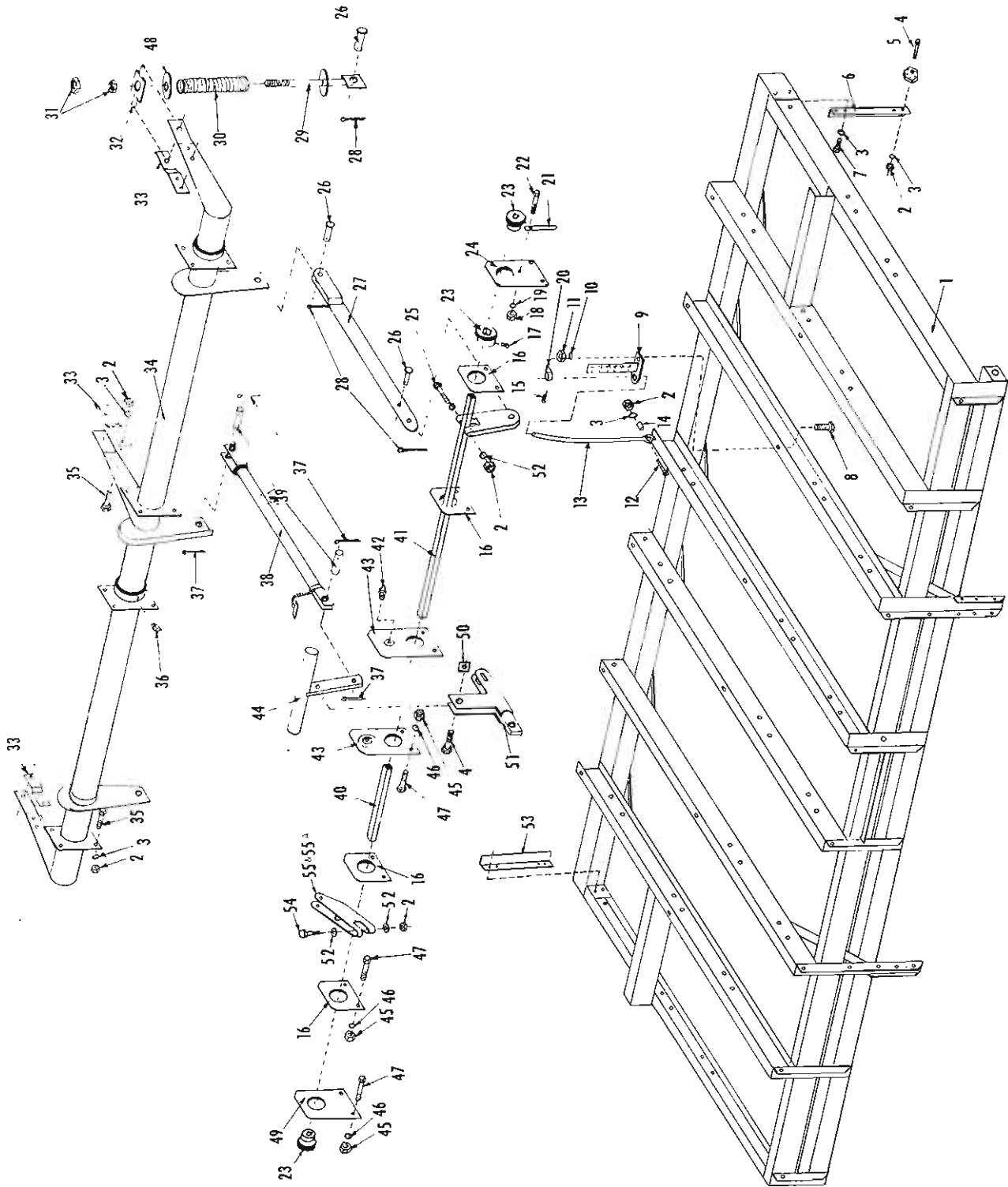
Index	1
Drill Frame Pressure Shaft And Rear Hydraulic Assembly	2 & 3
Drag, Bar, Trip and Pressure Rod Assemblies	4 & 5
Seed Box and Foot Board Assembly	6 & 7
Frame, Gang Shaft and Drive Leg Assembly	8 & 9
Weeder Drive and Ground Rod Assembly (right and left weeder drive)	10
Right and Left Axle Hub Assembly	11
Jack Shaft and Feed Release Assembly	12 & 13
Standard and Trip Assembly	14
Hitch Assembly	15
Wheel And Hub Assembly	16
Hitch Jack Assembly	17
Cross Reference on all Parts	18

Important

ALL PARTS ARE IDENTIFIED WITH AN ITEM NUMBER. Some of the smaller parts such as bolts, nuts, washers, etc., are not all shown, however the quantity used is listed in the text for that section which they fit into. That particular quantity is always the quantity required for one complete assembly.

WHEN ORDERING REPLACEMENT PARTS, always include the part number and quantity required.

Smaller parts which are welded to-gether to construct a larger part, are not to be ordered as individual pieces, unless they have a part number to identify them.

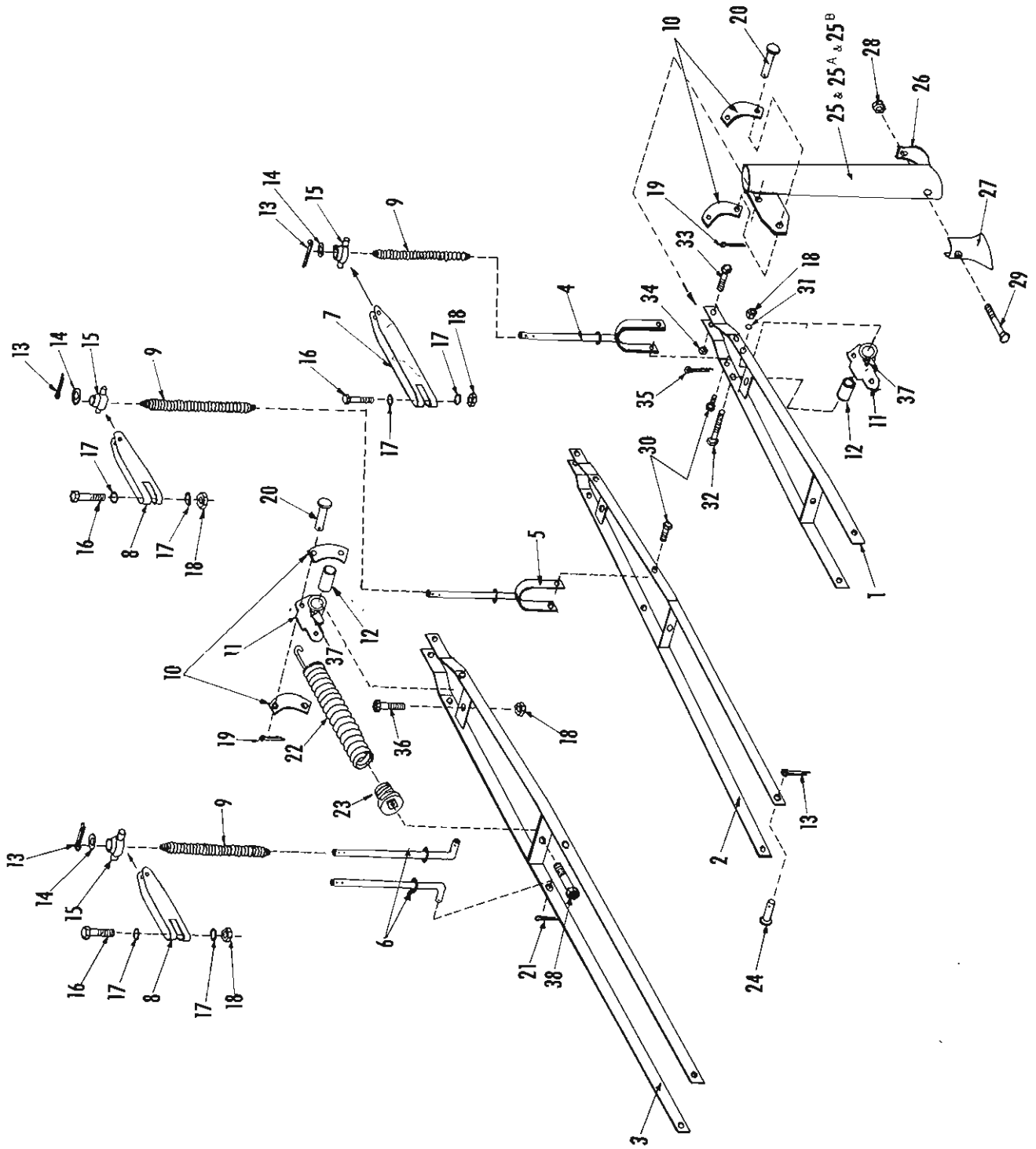


DRILL FRAME PRESSURE SHAFT AND REAR HYDRAULIC ASSEMBLY

Item	Part No.	Description	No. Used
1	S-6	DRILL FRAME - - - - -	1
2	W-516	HEX NUT - 1/2" - - - - -	46
3	W-525	LOCKWASHER - 1/2" - - - - -	21
4	W-488	HEX HEAD BOLT - 1/2" x 2" - - - - -	3

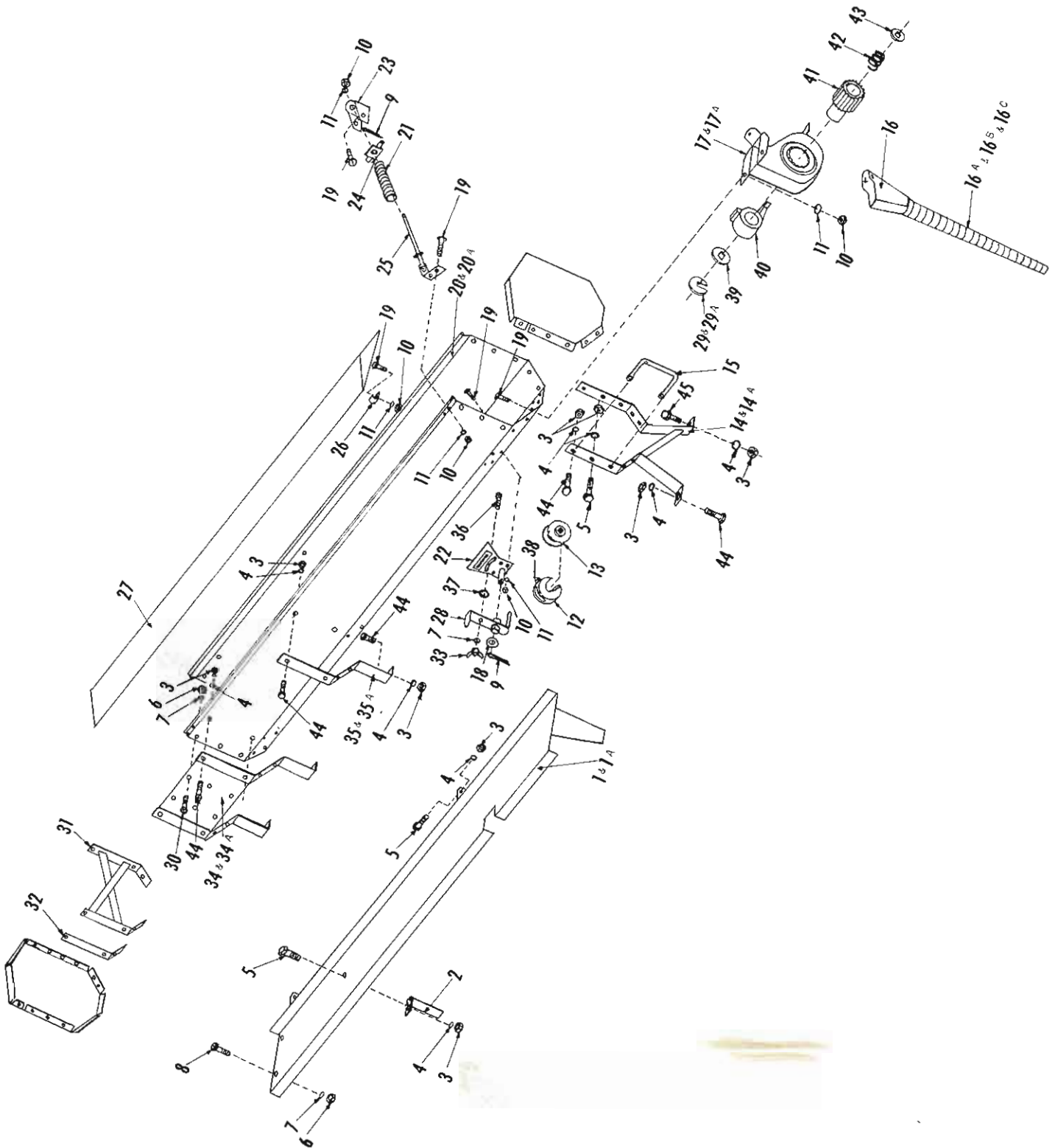
DRILL FRAME PRESSURE SHAFT AND REAR HYDRAULIC ASSEMBLY

Item	Part No.	Description	No. Used
5	S-117	HEX DEPTH ADJUSTMENT BLOCK - - - - -	2
6	S-263	LEFT DEPTH ADJUSTMENT STRAP - - - - -	1
7	W-484	HEX HEAD BOLT - 1/2" x 1" - - - - -	4
8	W-478	HEX HEAD BOLT - 3/8" x 2" - - - - -	1
9	S-321	DEPTH GUAGE BRACKET - - - - -	1
10	W-523	LOCKWASHER - 3/8" - - - - -	1
11	W-514	HEX NUT - 3/8" - - - - -	1
12	W-494	HEX HEAD BOLT - 1/2" x 3-3/4" - - - - -	1
13	S-324	ROD-DEPTH GUAGE - - - - -	1
14	S-340	BUSHING - - - - -	1
15	S-322	SET SCREW - to adjust pointer - - - - -	1
16	S-33	INTERMEDIATE BEARING BRACKET on pressure shaft - -	4
17	S-755	SET SCREW - square head - 7/16" x 1" - - - - -	8
18	W-512	HEX NUT - 1/2" - - - - -	1
19	W-521	LOCKWASHER - 1/4" - - - - -	1
20	S-320	DEPTH GUAGE - pointer - - - - -	1
21	S-108	LEVEL POINTER FRAME - - - - -	1
22	W-469	HEX HEAD BOLT - 1/4" x 3/4" - - - - -	1
23	S-11	BEARING CASTING - - - - -	8
24	S-262	BEARING BRACKET - left - - - - -	1
25	W-495	HEX HEAD BOLT - 1/2" x 4" - - - - -	2
26	S-777	CLEVIS PIN - - - - -	2
27	S-25	DEPTH CONTROL BAR - - - - -	2
28	W-532	COTTER PIN - 3/16" x 1 1/4" - - - - -	7
29	S-63	WEEDER PRESSURE RODS - - - - -	3
30	S-99	PRESSURE SPRINGS - rear - - - - -	3
31	W-575	HEX JAM NUT - 3/4" - - - - -	6
32	S-7	SWIVEL BLOCK - - - - -	3
33	S-24	CLEVIS FORMING STRAP - - - - -	3
34	S-19	ROCKER TUBE - rear, hydraulic - - - - -	1
35	W-486	HEX HEAD BOLT - 1/2" x 1 1/2" - - - - -	14
36	C-305	GREASE NIPPLES - 1/8" N.P.T. 45° angle - - - - -	8
37	W-534	COTTER PIN - 1/4" x 1 1/4" - - - - -	4
38	S-16	CONTROL TUBE - hydraulic - - - - -	1
39	S-75	TUBE PIN - - - - -	2
40	S-64	PRESSURE SHAFT - right - - - - -	1
41	S-65	PRESSURE SHAFT - left - - - - -	1
42	C-304	GREASE NIPPLE - 1/8" N.P.T. straight - - - - -	2
43	S-35	BEARING BRACKETS - centre - - - - -	2
44	S-44	HYDRAULIC ROCKER - front - - - - -	1
45	W-515	HEX NUT - 7/16" - - - - -	16
46	W-524	LOCKWASHER - 7/16" - - - - -	16
47	S-482	HEX HEAD BOLT, special bolt - 7/16" x 1" - - - - -	16
48	S-257	WASHER - rear pressure spring - - - - -	3
49	S-34	BEARING PLATE - right - - - - -	1
50	W-567	SPEED LOCK NUT - 1/2" - - - - -	1
51	S-237	LOCK BRACKET - hydraulic - - - - -	1
52	S-751	MACHINERY WASHER - 1-1/8" O.D. x 17/32 I.D. - - - - -	62
53	S-51	DEPTH ADJUSTMENT STRAP - right - - - - -	1
54	W-492	HEX HEAD BOLT - 1/2" x 3" - - - - -	29
55	S-46	PRESSURE ARM - long - - - - -	8
55A	S-47	PRESSURE ARM - short - - - - -	21



DRAG BAR, TRIP AND PRESSURE ROD ASSEMBLIES

Item	Part No.	Description	No. Used
1	S-80	DRAG BAR - short - - - - -	8
2	S-81	DRAG BAR - intermediate - - - - -	7
3	S-82	DRAG BAR - long - - - - -	7
4	S-58	PRESSURE ROD - short drag bar - - - - -	8
5	S-56	PRESSURE ROD - intermediate drag bar - - - - -	7
6	S-57	PRESSURE RODS - long drag bar - - - - -	14
7	S-46	PRESSURE ARM - long - - - - -	8
8	S-47	PRESSURE ARM - short - - - - -	21
9	S-100	PRESSURE ROD SPRING - tapered end - 13-3/8" long -	29
10	S-118	CONNECTING STRAPS - - - - -	44
11	S-17	TRIP ROCKER - - - - -	22
12	S-135	BUSHING - for trip rocker - - - - -	22
13	W-532	COTTER PIN - 3/16" x 1 1/4" - - - - -	52
14	S-243	MACHINERY WASHER - 1-1/8" O.D. x 19/32" I.D. - - - -	29
15	S-102	PRESSURE ROD CASTING - - - - -	29
16	W-492	HEX HEAD BOLT - 1/2" x 3" - - - - -	29
17	S-751	MACHINERY WASHER - 1-1/8" O.D. x 17/32 I.D. - - - -	58
18	W-516	HEX NUT - 1/2" - - - - -	73
19	W-530	COTTER PIN - 5/32" x 1" - - - - -	44
20	BW-8	CLEVIS PIN - 1/2" x 1 1/4" - - - - -	44
21	S-531	COTTER PIN - 3/16" x 1" - - - - -	28
22	V-339	TRIP SPRING - - - - -	22
23	V-338	CAST PLUG - - - - -	22
24	W-73	CLEVIS PIN - 5/8" x 2-1/8" - - - - -	23
25	S-41	GRAIN TUBE - short drag bar - - - - -	8
25A	S-42	GRAIN TUBE - intermediate drag bar - - - - -	7
25B	S-119	GRAIN TUBE - long drag bar - - - - -	7
26	S-143	DEFLECTOR - - - - -	22
27	S-74	SWEEP - - - - -	22
28	W-514	HEX NUT - 3/8" - - - - -	22
29	S-89	SWEEP BOLT - 3/8" x 3 1/2" - #3 plow head - - - - -	22
30	S-101	SHOULDER BOLT - 3/8" x 1-1/32" - - - - -	30
31	W-525	LOCKWASHER - 1/2" - - - - -	22
32	W-493	HEX HEAD BOLT - 1/2" x 3 1/2" - - - - -	22
33	S-144	HEX HEAD BOLT - 5/8" x 2" S.A.E. - - - - -	22
34	S-749	HEX NUT, slotted - 5/8" S.A.E. - - - - -	22
35	W-528	COTTER PIN - 1/8" x 1" - - - - -	22
36	S-776	HEX HEAD BOLT - 1/2" x 1 1/2" with regular thread - - - -	22
37	C-304	GREASE NIPPLES - 1/8" N.P.T. straight - - - - -	22
38	S-951	BOLT - 1/2" x 4 1/2" - - - - -	22



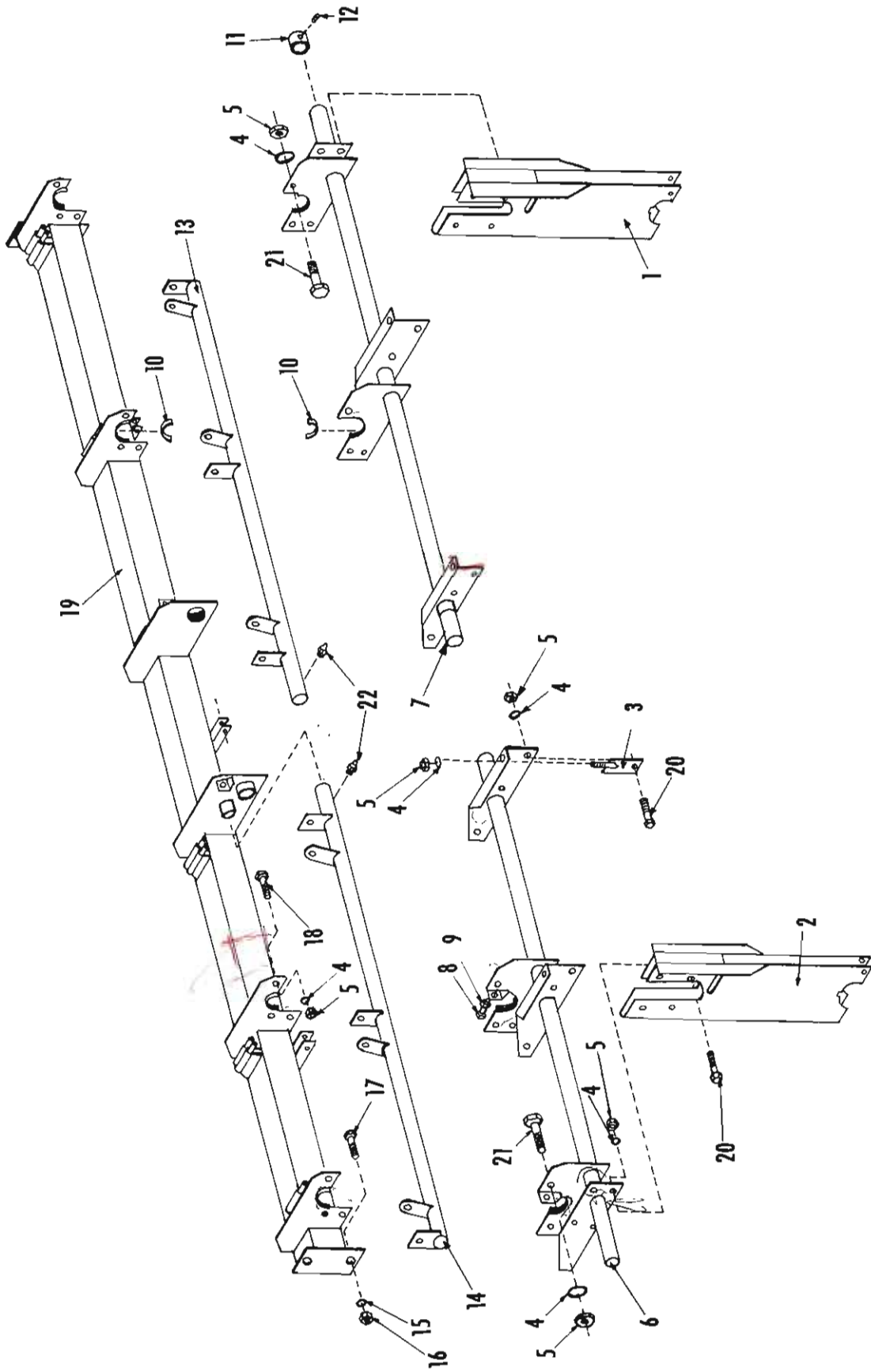
SEED BOX AND FOOT BOARD ASSEMBLY

Item	Part No.	Description	No. Used
1	S-625	FOOT BOARD - right	1
1A	S-628	FOOT BOARD - left	1
2	S-235	LEG - for foot board	2

SEED BOX AND FOOT BOARD ASSEMBLY

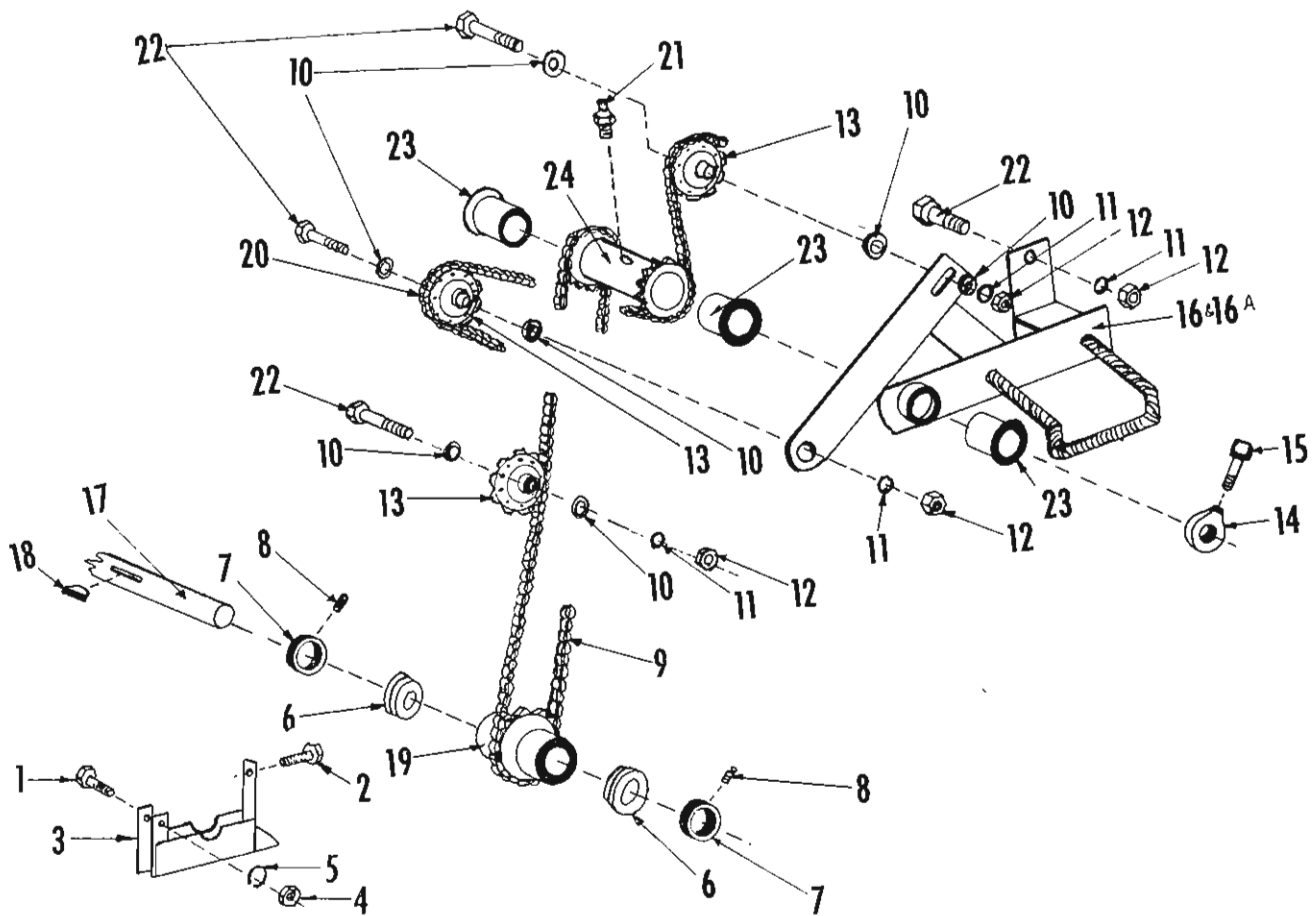
7.

Item	Part No.	Description	No. Used
3	W-514	HEX NUT - 3/8" - - - - -	65
4	W-523	LOCKWASHERS - 3/8" - - - - -	65
5	W-475	HEX HEAD BOLT - 3/8" x 1" - - - - -	26
6	W-513	HEX NUT - 5/16" - - - - -	18
7	W-522	LOCK WASHER - 5/16" - - - - -	20
8	S-746	TRUSS HEAD BOLT - 5/16" x 3/4" - - - - -	2
9	W-528	COTTER PIN - 1/8" x 1" - - - - -	6
10	W-512	HEX NUT - 1/4" - - - - -	120
11	W-521	LOCK WASHER - 1/4" - - - - -	120
12	S-14	SHIFT COLLAR - - - - -	2
13	S-13	SHIFT SPOOL - - - - -	2
14	S-27	GRAIN BOX BRACE - outer right - - - - -	1
14A	S-309	GRAIN BOX BRACE - outer left - - - - -	1
15	S-249	HANDLE - - - - -	2
16	S-267	TUBE TOP-RIBBON - - - - -	22
16A	S-84	FLEXIBLE RIBBON - 34" long for short drag bars - - -	8
16B	S-85	FLEXIBLE RIBBON - 25" long for intermed. drag bars -	7
16C	S-264	FLEXIBLE RIBBON - 30" long for long drag bars - - -	7
17	S-268	SEED BUCKET ASSEMBLY - - - - -	22
17A	S-148	SEED BUCKET only - - - - -	22
18	S-543	MACHINERY WASHER - 3/4" x 14 GA. - - - - -	2
19	S-744	TRUSS HEAD BOLT - 1/4" x 1/2" - - - - -	120
20	S-67	GRAIN BOX - right - - - - -	1
20A	S-715	GRAIN BOX - left - - - - -	1
21	S-763	LID SPRING - 5/8" O.D. x 9-13/16" long - - - - -	4
22	S-240	SEED SETTING PLATE - - - - -	2
23	S-73	LID BRACKET - - - - -	4
24	S-59	SWIVEL LUG-LID SPRINGS - - - - -	4
25	S-244	ROD for lid spring - - - - -	4
26	S-54	LID HINGE CLIPS - - - - -	6
27	S-66	LIDS - - - - -	2
28	S-236	SEED SETTING ARM - - - - -	2
29	S-241	THICK SHIM - to adjust seed buckets - - - - use as required	
29A	S-242	THIN SHIM - to adjust seed bucket - - - - use as required	
30	W-471	HEX HEAD BOLT - 5/16" x 1" - - - - -	16
31	S-38	OUTER BRACE - inside grain box - - - - -	2
32	S-37	INNER BRACE - inside seed box - - - - -	4
33	S-747	WINGNUT - 5/16" - - - - -	2
34	S-310	TIE PLATE - rear - - - - -	1
34A	S-245	TIE PLATE - front - - - - -	1
35	S-28	GRAIN BOX BRACE - inner rear - - - - -	2
35A	S-26	GRAIN BOX BRACE - inner front - - - - -	2
36	S-745	CARRIAGE HEAD BOLT - 5/16" x 1" - - - - -	2
37	W_538	WASHER, plain - 3/8" - - - - -	2
38	C-304	GREASE NIPPLE - 3/8" N.P.T. straight - - - - -	2
39	S-146	OUTER WASHER with square hole - - - - -	22
40	S-147	SHUT OFF-SEED BUCKET - - - - -	22
41	S-149	FLUTED ROLLER - - - - -	22
42	S-150	SPRING - in fluted roller - - - - -	22
43	S-151	WASHER - to fit inside fluted roller, square hole -	22
44	W-187	HEX HEAD BOLT - 3/8" x 1 1/4" - - - - -	34
45	W-477	HEX HEAD BOLT - 3/8" x 1 1/2" - - - - -	5

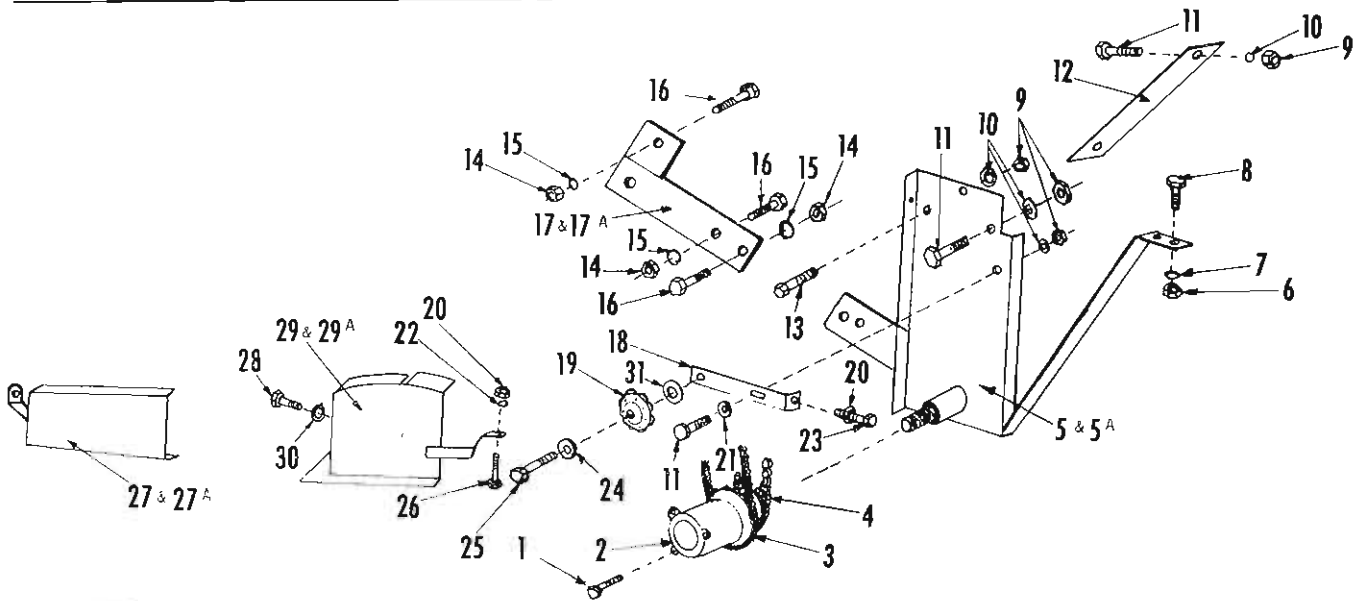


FRAME, GANG SHAFT AND DRIVE LEG ASSEMBLY

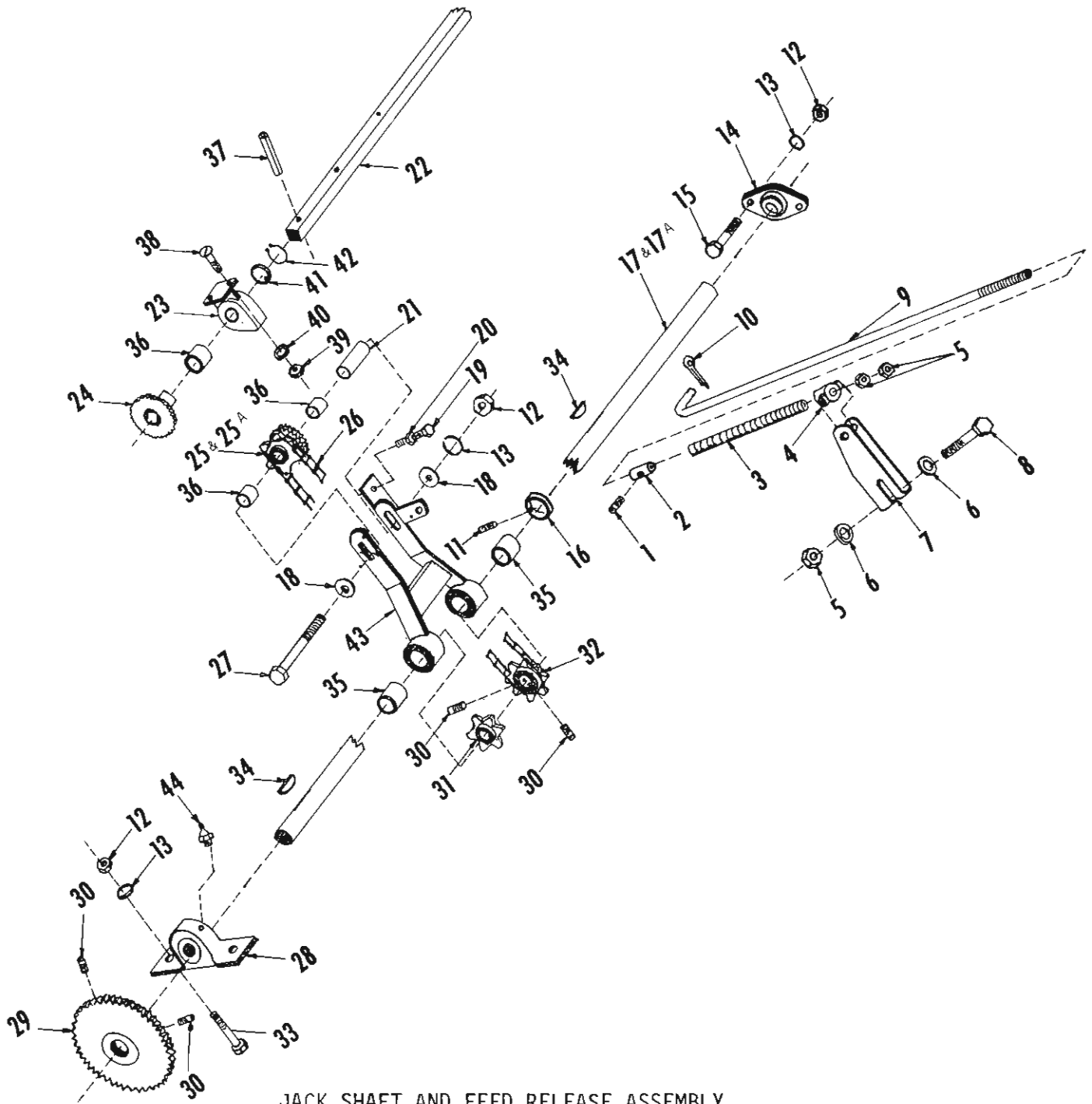
Item	Part No.	Description	No. Used
1	BW-87	DRIVE LEG - right side - - - - -	1
2	BW-86	DRIVE LEG - left side - - - - -	1
3	BW-71	CLAMP STRAP - standard - - - - -	4
4	W-525	LOCKWASHER - 1/2" - - - - -	28
5	W-516	HEX NUT - 1/2" - - - - -	28
6	S-307	GANG SHAFT - left - - - - -	1
7	S-20	GANG SHAFT - right - - - - -	1
8	BW-10	HEX HEAD BOLT - 3/4" x 1-3/4" - - - - -	6
9	W-575	HEX JAM NUT - 3/4" - - - - -	6
10	BW-5	NYLON BEARING - rocker shaft - - - - -	8
11	BW-6	GANG SHAFT COLLARS - - - - -	4
12	W-569	SET SCREW - square head - 1/2" x 1" - - - - -	4
13	S-2	ROCKER SHAFT - right - - - - -	1
14	S-3	ROCKER SHAFT - left - - - - -	1
15	W-526	LOCKWASHER - 5/8" - - - - -	4
16	W-517	HEX NUT - 5/8" - - - - -	4
17	W-500	HEX HEAD BOLT - 5/8" x 2 1/4" - - - - -	4
18	W-486	HEX HEAD BOLT - 1/2" x 1 1/2" - - - - -	10
19	S-1	WEEDER FRAME ASSEMBLY - - - - -	1
20	W-490	HEX HEAD BOLT - 1/2" x 2 1/2" - - - - -	12
21	W-485	HEX HEAD BOLT - 1/2" x 1 1/4" - - - - -	2
22	C-304	GREASE NIPPLES - 1/8" N.P.T. straight - - - - -	2



Item	Part No.	Description	No. Used
1	W-480	HEX HEAD BOLT - 3/8" x 2 1/2"	2
2	W-187	HEX HEAD BOLT - 3/8" x 1 1/4"	2
3	BW-27	LEG SHOE	2
4	W-514	HEX NUT - 3/8"	2
5	W-523	LOCKWASHER - 3/8"	2
6	BW-7	LEG NYLON	4
7	BW-119	GROUND ROD COLLAR	4
8	W-554	ALLAN SET SCREW - 5/16" x 5/16"	4
9	BW-2	LEG CHAIN - 44 link, 1 1/4" pitch	2
10	W-540	WASHER, plain - 5/8"	12
11	W-526	LOCKWASHER - 5/8"	10
12	W-517	HEX NUT - 5/8"	10
13	BW-3	IDLER SPROCKET - 9 tooth	6
14	BW-6	GANGSHAFT COLLAR	4
15	W-569	SET SCREW - squarehead, 1/2" x 1"	4
16	S-8	SPROCKET BRACKET - weeder drive (right side)	1
16A	S-9	SPROCKET BRACKET - weeder drive (left side)	1
17	S-155	GROUND ROD	2
18	BW-122	WOODRUF KEY - 3/16" x 3/4" alloy	2
19	BW-19	GROUND ROD SPROCKET (8 tooth)	2
20	S-98	DRIVE CHAIN, weeder - 86 link, 1 1/4" pitch	2
21	C-304	GREASE NIPPLE - 1/8" N.P.T. straight	2
22	W-500	HEX BOLT - 5/8" x 2 1/4"	10
23	BW-13	OILLITE BUSHING - drive sleeve	6
24	S-109	DRIVE SLEEVE ASSEMBLY	2



Item	Part No.	Description	No. Used
1	S-696	HEX HEAD BOLT - 1/2" x 2" S.A.E. - - - - -	6
2	S-225	SPROCKET ASSEMBLY - drive wheel - - - - -	2
3	S-98	DRIVE CHAIN - weeder, 86 link, 1 1/2" pitch - - - - -	2
4	S-90	CHAIN-wheel sprocket to jack shaft, 42 link 1 1/4" pitch	2
5	S-29	AXLE ASSEMBLY - right - - - - -	1
5A	S-30	AXLE ASSEMBLY - left - - - - -	1
6	W-515	HEX NUT - 7/16" - - - - -	2
7	W-524	LOCKWASHER - 7/16" - - - - -	2
8	W-483	HEX HEAD BOLT - 7/16" x 1 1/2" - - - - -	2
9	W-516	HEX NUT - 1/2" - - - - -	12
10	W-525	LOCKWASHER - 1/2" - - - - -	12
11	W-486	HEX HEAD BOLT - 1/2" x 1 1/2" - - - - -	10
12	S-36	BRACE STRAP - axle to frame - - - - -	2
13	W-492	HEX HEAD BOLT - 1/2" x 3" - - - - -	2
14	W-517	HEX NUT - 5/8" - - - - -	8
15	W-526	WASHER - 5/8" - - - - -	8
16	W-500	HEX HEAD BOLT - 5/8" x 2 1/4" - - - - -	8
17	S-77	BRACE, right - weeder frame to axle - - - - -	1
17A	S-78	BRACE, left - weeder frame to axle - - - - -	1
18	S-22	IDLER SPROCKET - bracket on axle plate - - - - -	2
19	BW-3	IDLER SPROCKET - 9 tooth - - - - -	2
20	W-514	HEX NUT - 3/8" - - - - -	4
21	W-539	WASHER, plain - 1/2" - - - - -	2
22	W-523	LOCKWASHER - 3/8" - - - - -	2
23	S-737	SET SCREW - square head, 3/8" x 2" - - - - -	2
24	W-629	WASHER, plain - 5/8" S.A.E. - - - - -	2
25	W-497	HEX HEAD BOLT - 5/8" x 1 1/2" - - - - -	2
26	W-477	HEX HEAD BOLT - 3/8" x 1 1/2" - - - - -	2
27	S-344	CHAIN GUARD - ext., right - - - - -	1
27A	S-345	CHAIN GUARD - ext., left - - - - -	1
28	S-765	HEX HEAD BOLT - 7/16" x 1" - - - - -	2
29	S-106	CHAIN GUARD - right - - - - -	1
29A	S-107	CHAIN GUARD - left - - - - -	1
30	S-766	WASHER, plain - 7/16" - - - - -	2
31	W-540	WASHER, plain - 5/8" - - - - -	2

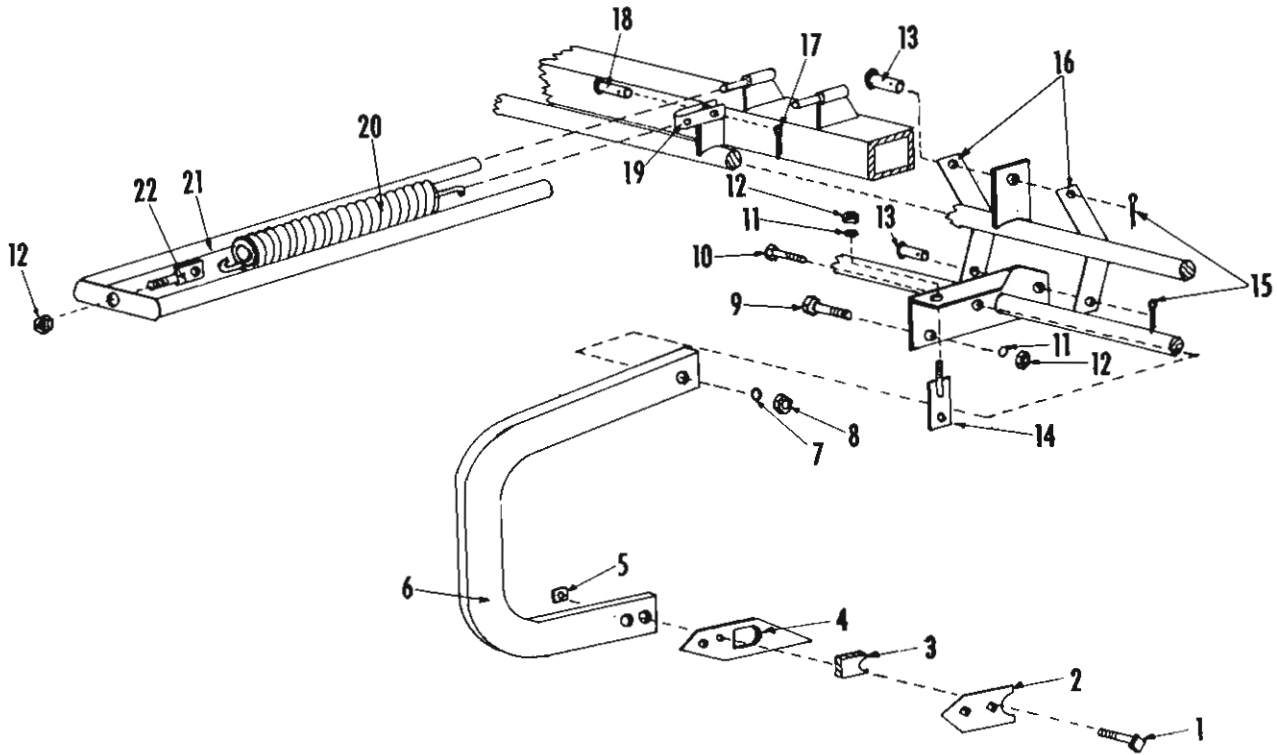


JACK SHAFT AND FEED RELEASE ASSEMBLY

Item	Part No.	Description	No. Used
1	S-753 ✓	SET SCREW, square head - 5/16" x 1/2" - - - - -	2
2	S-140	COLLAR - feed release rod - - - - -	2
3	S-773	SPRING - feed release rod, 6 1/2" long - - - - -	2
4	S-102	PIVOT CASTING - - - - -	2
5	W-516	HEX NUT - 1/2" - - - - -	6
6	S-751	WASHER, machine - 1-1/8" O.D. x 17/32" I.D. - - - -	4
7	S-60	FEED RELEASE ARM - on pressure shaft - - - - -	2
8	W-492	HEX HEAD BOLT - 1/2" x 3" - - - - -	2

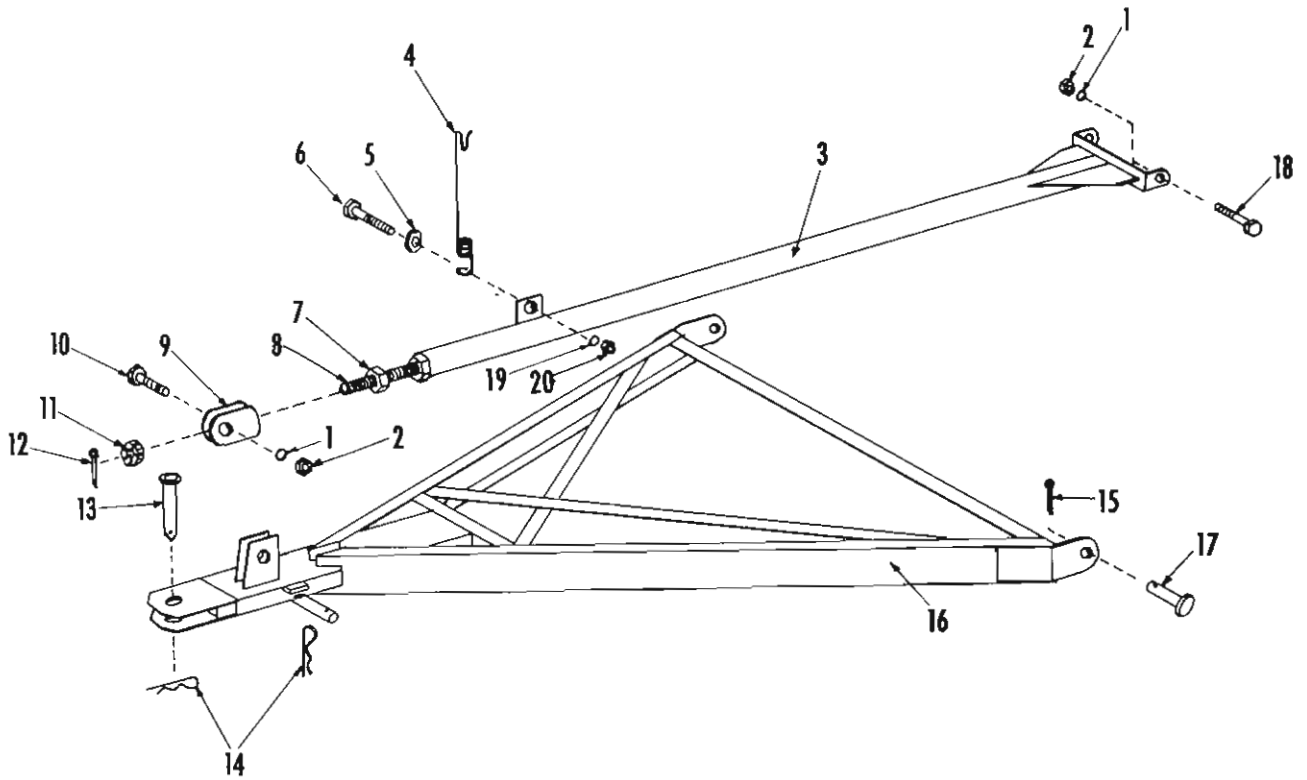
JACK SHAFT AND FEED RELEASE ASSEMBLY

Item	Part No.	Description	No. Used
9	S-68	FEED RELEASE ROD - - - - -	2
10	W-530	COTTER PIN - 5/32" x 1" - - - - -	2
11	W-554	SETSREW, allan - 5/16" x 5/16" - - - - -	2
12	W-514	HEX NUT - 3/8" - - - - -	10
13	W-523	LOCKWASHER - 3/8" - - - - -	10
14	S-92	FLANGE BEARING ASSEMBLY - - - - -	2
	S-762	(BEARING INSERT ONLY) 1706-205-100 - - - - -	2
15	W-187	HEX HEAD BOLT - 3/8" x 1 1/4" - - - - -	4
16	BW-119	COLLAR - - - - -	2
17	S-138	JACK SHAFT - right - - - - -	1
17A	S-145	JACK SHAFT - left - - - - -	1
18	W-538	WASHER, plain - 3/8" - - - - -	4
19	S-754	SET SCREW, squarehead - 3/8" x 1 1/2" - - - - -	2
20	S-748	JAM NUT - 3/8" - - - - -	2
21	S-137	AXLE - for gear and sprocket assembly - - - - -	2
22	S-71	FEED SHAFT - - - - -	2
23	S-115	BEARING BRACKET - on feed shaft - - - - -	2
24	S-114	FEED SHAFT GEAR - - - - -	2
25	S-113	9 TOOTH SPROCKET AND 21 TOOTH GEAR - - - - - (for regular seeding rate)	2
25A	S-116	9 TOOTH SPROCKET AND 14 TOOTH GEAR - - - - - (for small seeds -flax, etc.)	2
26	S-111	FEED DRIVE CHAIN - #51 link - 21 link - - - - - (add 2 extra links when using S-116 assembly)	2
27	W-481	HEX HEAD BOLT - 3/8" x 3 1/2" - - - - -	2
28	S-91	BEARING ASSEMBLY - pillow block - - - - -	2
	S-774	BEARING INSERT ONLY - - - - -	2
29	S-93	40 TOOTH SPROCKET - on jack shaft - - - - -	2
30	S-757	SETSCREWS, allan - 1/4" x 1/2" - - - - -	2
31	S-317	6 TOOTH SPROCKET - (to use with S-116 for small seed setting) - - - - -	2
32	S-112	9 TOOTH SPROCKET - on feed drive (use with S-113 for regular seed settings) - - - - -	2
33	W-477	HEX HEAD BOLT - 3/8" x 1 1/2" - - - - -	4
34	S-239	WOODRUF KEY - 1/4" x 7/8" - - - - -	4
35	S-141	LOWER BUSHING - 1 1/4" O.D. x 1" I.D. for feed release bracket - - - - -	4
36	S-142	BUSHING - 1-7/16" O.D. x 1 3/16" I.D. for S-113, S-115 and S-116 - - - - -	10
37	S-760	SPRING PIN - 5/32" x 1" - - - - -	
38	S-746	TRUSS HEAD BOLT - 5/16" x 3/4" - - - - -	4
39	W-513	HEX NUT - 5/16" - - - - -	4
40	W-522	LOCKWASHER - 5/16" - - - - -	4
41	S-246	WASHER - on S-114 gear - - - - -	2
42	S-104	RETAINING RING - - - - -	2
43	S-136	BRACKET - feed release - - - - -	2
44	S-752	GREASE NIPPLE - 1/4" - - - - -	2
45	S-103	SHOULDER BOLT - for tally sprocket - - - - -	1
46	S-226	TALLY SPROCKET - (24 tooth) - - - - -	1
47	S-55	TALLY PLATE - - - - -	1
48	S-10	TALLY WORM - - - - -	1
49	S-88	ACREAGE TALLY - - - - -	1



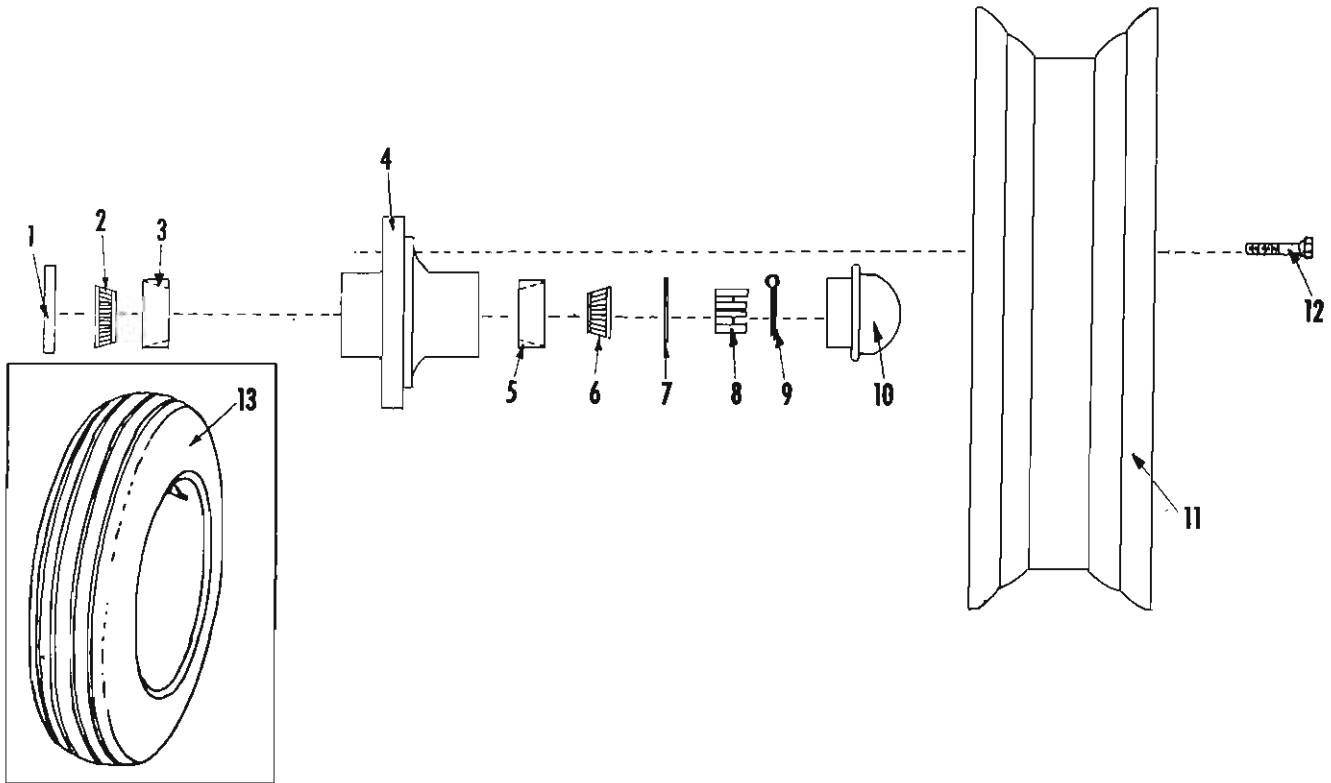
STANDARD AND TRIP ASSEMBLY

Item	Part No.	Description	No. Used
1	W-72	SHOE BOLT - carriage $\frac{1}{2}$ " x $1 \frac{3}{4}$ "	8
2	W-69	SIDE PLATE	4
3	W-1	WOOD BOXING	4
	W-1-N	(Urethane boxing optional)	
4	W-71	STEEL SHOE	4
5	W-567	SPEED LOCK NUT - $\frac{1}{2}$ "	8
6	BW1-80	STANDARD	4
7	W-526	LOCKWASHER - $\frac{5}{8}$ "	4
8	W-517	HEX NUT - $\frac{5}{8}$ "	4
9	W-490	HEX HEAD BOLT - $\frac{1}{2}$ " x $2\frac{1}{2}$ "	4
10	W-500	HEX HEAD BOLT - $\frac{5}{8}$ " x $2\frac{1}{4}$ "	4
11	W-525	LOCKWASHER - $\frac{1}{2}$ "	8
12	W-516	HEX NUT - $\frac{1}{2}$ "	14
13	W-80	CLEVIS PIN - $\frac{5}{8}$ " x $1\text{-}7/16$ "	12
14	BW-71	CLAMP STRAP - standard	4
15	W-532	COTTER PIN - $\frac{3}{16}$ " x $1\frac{1}{2}$ "	12
16	BW-65	CONNECTING STRAP	12
17	W-530	COTTER PIN - $\frac{5}{32}$ " x 1"	6
18	BW-8	SPRING CLEVIS PIN	6
19	BW-22	SPRING CLEVIS	6
20	BW-4	TRIP SPRING - $2\frac{1}{2}$ " O.D.	6
21	BW-28	SPRING FRAME	6
22	BW-9	EYEBOLT	6



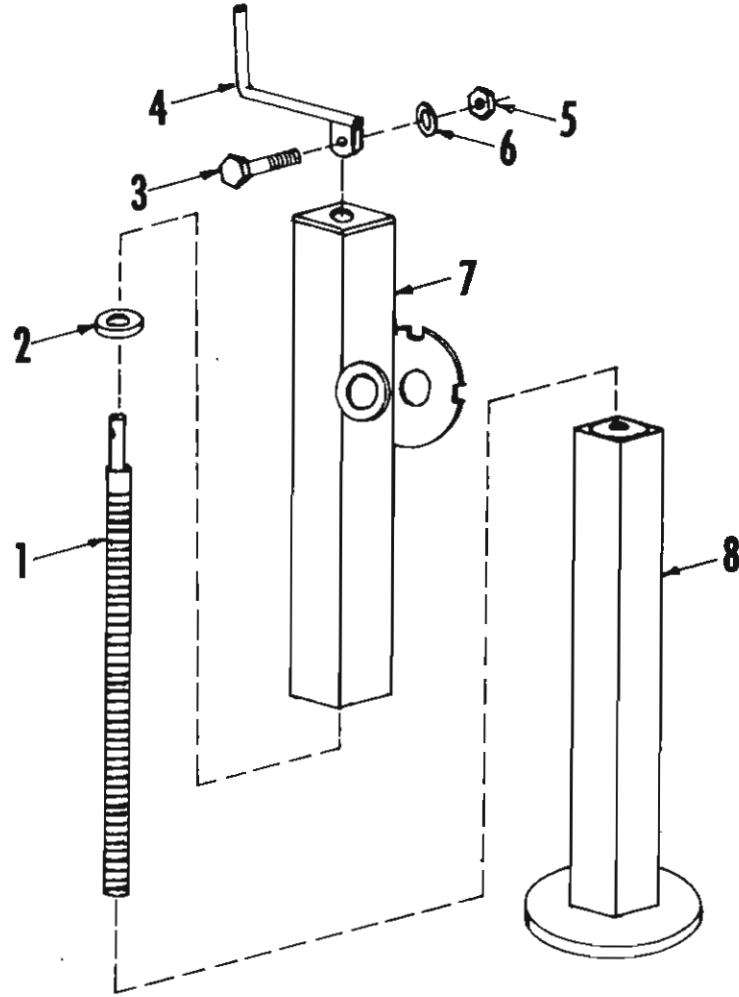
HITCH ASSEMBLY

Item	Part No.	Description	No. Used
1	W-526	LOCKWASHER - 5/8" - - - - -	3
2	W-517	HEX NUT - 5/8" - - - - -	3
3	S-21	HITCH TIE BAR - - - - -	1
4	W-7	HOSE HOLDER - - - - -	1
5	W-539	PLAIN WASHER - 1/2" - - - - -	1
6	W-486	HEX HEAD BOLT - 1/2" x 1 1/2" - - - - -	1
7	S-711	HEX JAM NUT - 1" - - - - -	1
8	S-332	THREADED ROD - 1" x 7 1/2" - - - - -	1
9	S-45	CLEVIS - front tie bar - - - - -	1
10	W-504	HEX HEAD BOLT - 5/8" x 4" - - - - -	1
11	S-712	SLOTTED HEX NUT - 1" - - - - -	1
12	W-533	COTTER PIN - 3/16" x 2" - - - - -	1
13	BW-82	DRAW PIN - - - - -	1
14	BW-11	HAIR PIN - 3/16" - - - - -	2
15	W-532	COTTER PIN - 3/16" x 1 1/2" - - - - -	2
16	S-12	HITCH ASSEMBLY - - - - -	1
17	S-343	CLEVIS PIN - 5/8" x 1-3/4" - - - - -	2
18	W-497	HEX HEAD BOLT - 5/8" x 1 1/2" - - - - -	2
19	W-525	LOCKWASHER - 1/2" - - - - -	1
20	W-516	HEX NUT - 1/2" - - - - -	1



WHEEL AND HUB ASSEMBLY

Item	Part No.	Description	No. Used
1	S-158	DUST SEAL - - - - -	2
2	S-251	BEARING, outer - #15123 - - - - -	2
3	S-252	BEARING CUP, outer - #15250 - - - - -	2
4	S-323	HUB ASSEMBLY - - - - -	2
5	S-254	BEARING CUP, inner - #13621 - - - - -	2
6	S-253	BEARING, inner - #13685 - - - - -	2
7	W-541	WASHER, plain - 3/4" - - - - -	2
8	W-94	AXLE NUT - 3/4" S.A.E. slotted - - - - -	2
9	W-529	COTTER PIN - 1/8" x 1 1/4" - - - - -	2
10	S-255	HUB CAP - - - - -	2
11	S-348	WHEEL - 20" - - - - -	2
12	S-256	WHEEL BOLT, special - 1/2" x 1-5/8" - - - - -	6
13	S-346	TIRE - 750 x 20" - 6 ply - - - - -	2
	S-347	TUBE - 750 x 20" - - - - -	2



HITCH JACK ASSEMBLY

Item	Part No.	Description	No. Used
1	S-352	SCREW ROD - - - - -	1
2	S-356	THRUST BEARING - #T-63 - - - - -	1
3	W-473	HEX HEAD BOLT - 5/16" x 1½" - - - - -	1
4	S-353	CRANK - - - - -	1
5	W-513	HEX NUT - 5/16" - - - - -	1
6	W-522	LOCKWASHER - 5/16" - - - - -	1
7	S-351	SLEEVE - outer - - - - -	1
8	S-350	INNER TUBE AND BASE - - - - -	1

CROSS-REFERENCE INDEX

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W-1-N	14	3	S-55	13	47	S-117	3	5	S-320	3	20
S-1	9	19	S-56	5	5	S-118	5	10	S-321	3	9
BW-2	10	9	S-57	5	6	BW-119	10	7	S-322	3	15
S-2	9	13	S-58	5	4	S-119	5	25B	S-323	16	4
BW-3	11	19	S-59	7	24	BW-122	10	18	S-324	3	13
S-3	9	14	S-60	12	7	S-135	5	12	S-332	15	8
BW-4	14	20	S-63	3	29	S-136	13	43	V-338	5	23
BW-5	9	10	S-64	3	40	S-137	13	21	V-339	5	22
BW-6	9	11	BW-65	14	16	S-138	13	17	S-340	3	14
S-6	2	1	S-65	3	41	S-140	12	2	S-343	15	17
W-7	15	4	S-66	7	27	S-141	13	35	S-344	11	27
BW-7	10	6	S-67	7	20	S-142	13	36	S-345	11	27A
S-7	3	32	S-68	13	9	S-143	5	26	S-346	16	13
BW-8	14	18	W-69	14	2	S-144	5	33	S-347	16	13
S-8	10	16	W-71	14	4	S-145	13	17A	S-348	16	11
BW-9	14	22	BW-71	9	3	S-146	7	39	S-350	17	8
S-9	10	16A	S-71	13	22	S-147	7	40	S-351	17	7
BW-10	9	8	W-72	14	1	S-148	7	17A	S-352	17	1
S-10	13	48	W-73	5	24	S-149	7	41	S-353	17	4
BW-11	15	14	S-73	7	23	S-150	7	42	S-356	17	2
S-11	3	23	S-74	5	27	S-151	7	43	W-481	13	27
S-12	15	16	S-75	3	39	S-155	10	17	S-543	7	18
BW-13	10	23	S-77	11	17	S-158	16	1	W-554	10	8
S-13	7	13	S-78	11	17A	W-187	10	2	W-567	14	5
S-14	7	12	W-80	14	13	S-225	11	2	W-569	10	15
S-16	3	38	BW1-80	14	6	S-226	13	46	S-625	6	1
S-17	5	11	S-80	5	1	S-235	6	2	S-628	6	1A
BW-19	10	19	S-81	5	2	S-236	7	28	S-696	11	1
S-19	3	34	BW-82	15	13	S-237	3	51	S-712	15	11
S-20	9	7	S-82	5	3	S-239	13	34	S-715	7	20A
S-21	15	3	S-84	7	16A	S-240	7	22	S-737	11	23
BW-22	14	19	S-85	7	16B	S-241	7	29	S-747	7	33
S-22	11	18	BW-86	9	2	S-242	7	29A	S-749	5	34
S-24	3	33	BW-87	9	1	S-243	5	14	S-751	5	17
S-25	3	27	S-88	13	49	S-244	7	25	S-752	13	44
S-26	7	35A	S-89	5	29	S-245	7	34A	S-753	12	1
BW-27	10	3	S-90	11	4	S-246	13	41	S-754	13	19
S-27	7	14	S-91	13	28	S-249	7	15	S-755	3	17
BW-28	14	21	S-92	13	14	S-251	16	2	S-757	13	30
S-28	7	35	S-93	13	29	S-252	16	3	S-760	13	37
S-29	11	5	W-94	16	8	S-253	16	6	S-762	13	14
S-30	11	5A	S-98	11	3	S-254	16	5	S-763	7	21
S-33	3	16	S-99	3	30	S-255	16	10	S-773	12	3
S-34	3	49	S-100	5	9	S-256	16	12	S-774	13	28
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S-36	11	12	S-102	5	15	S-262	3	24			
S-37	7	32	S-103	13	45	S-263	3	6			
S-38	7	31	S-104	13	42	S-264	7	16C			
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			S-114	13	24						
			S-115	13	23						

NOTE: This list does not include regular hardware bolts, nuts, washers, etc.